

1/51

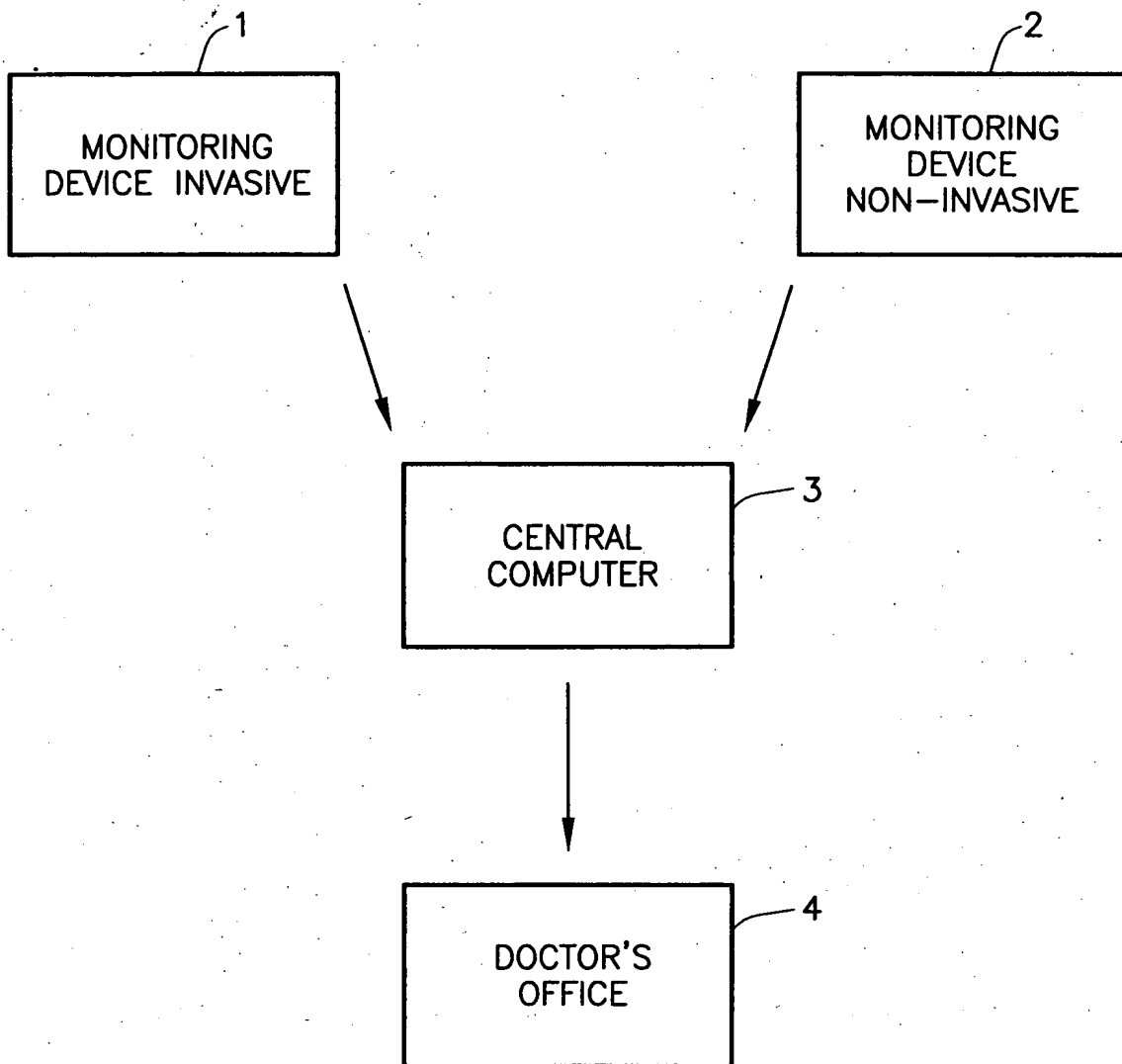
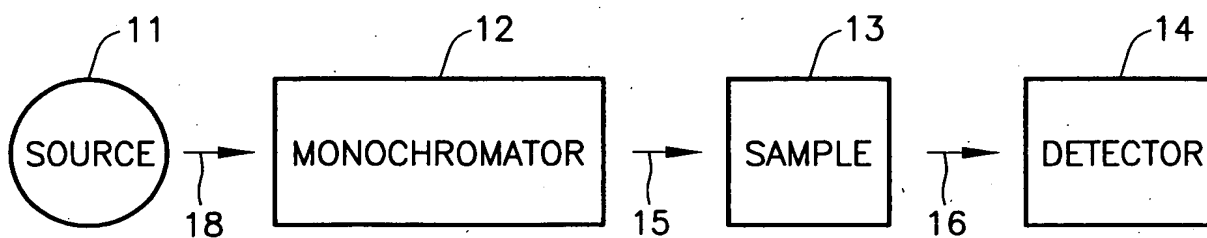
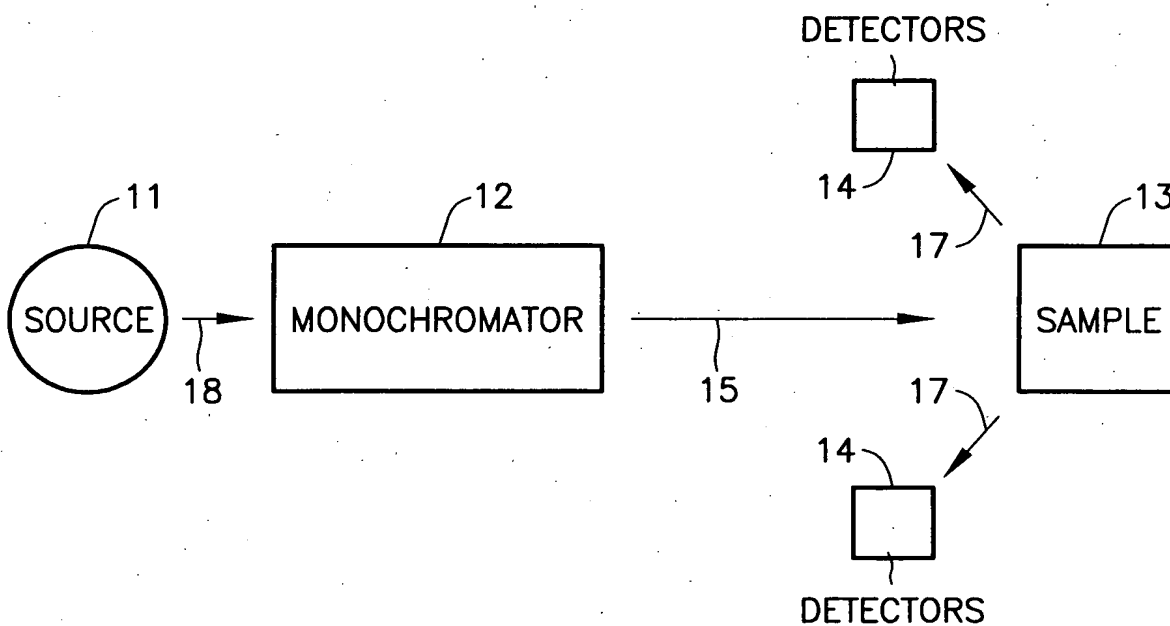


Fig. 1



NEAR-INFARED TRANSMITTANCE (NIT)

Fig. 2A



NEAR-INFARED TRANSMITTANCE (NIR)

Fig. 2B

3/51

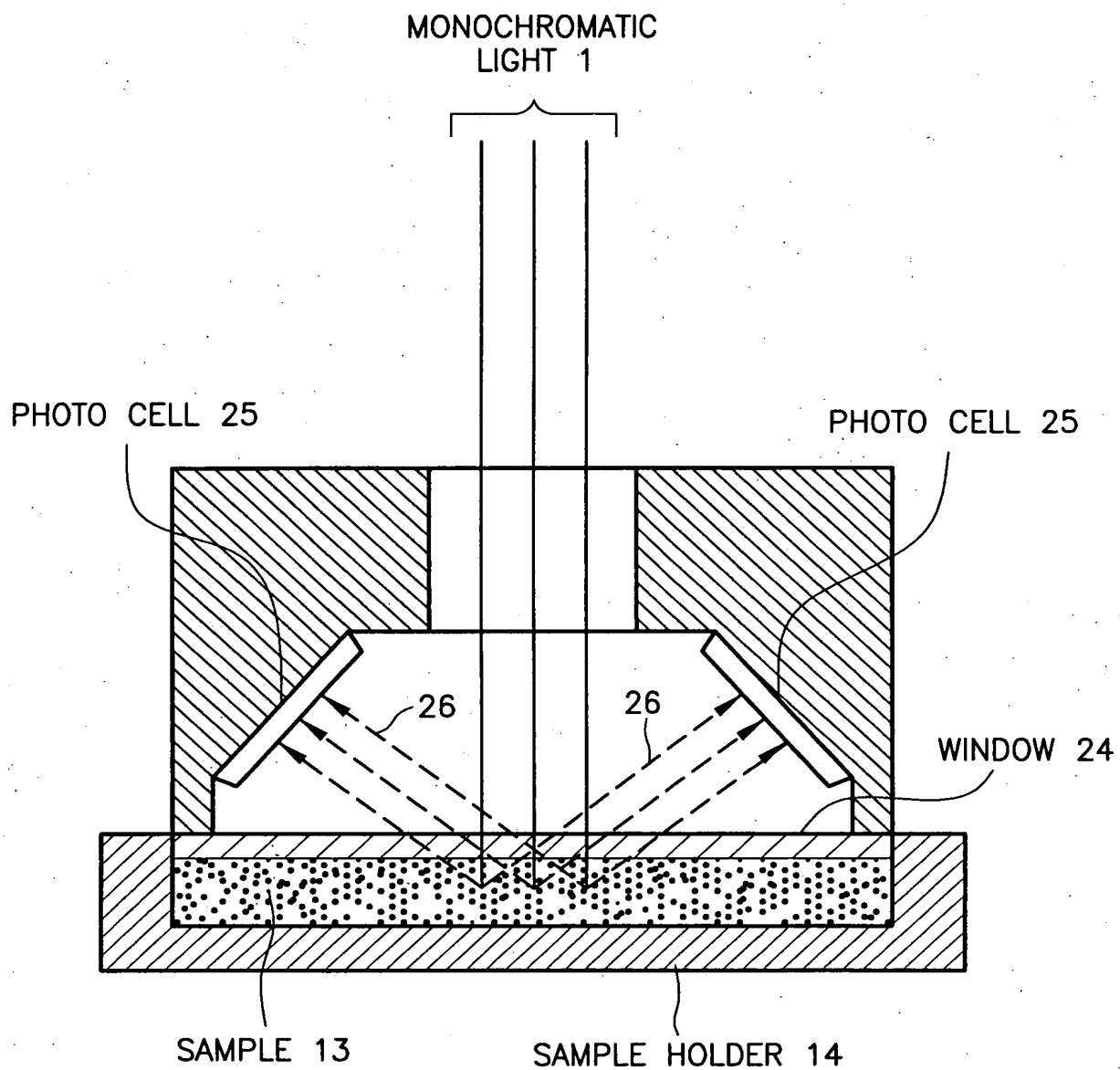


Fig. 3

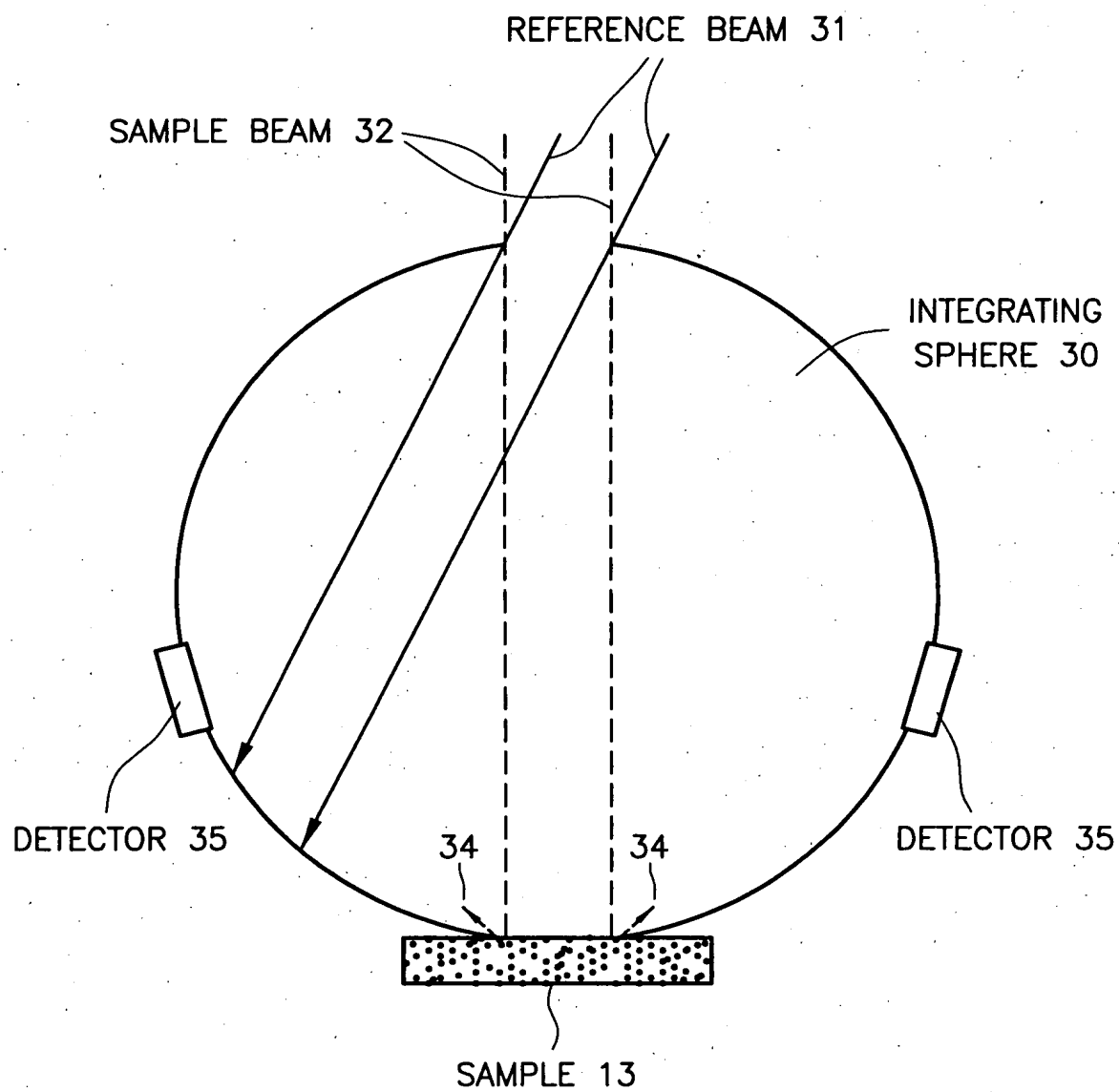


Fig. 4

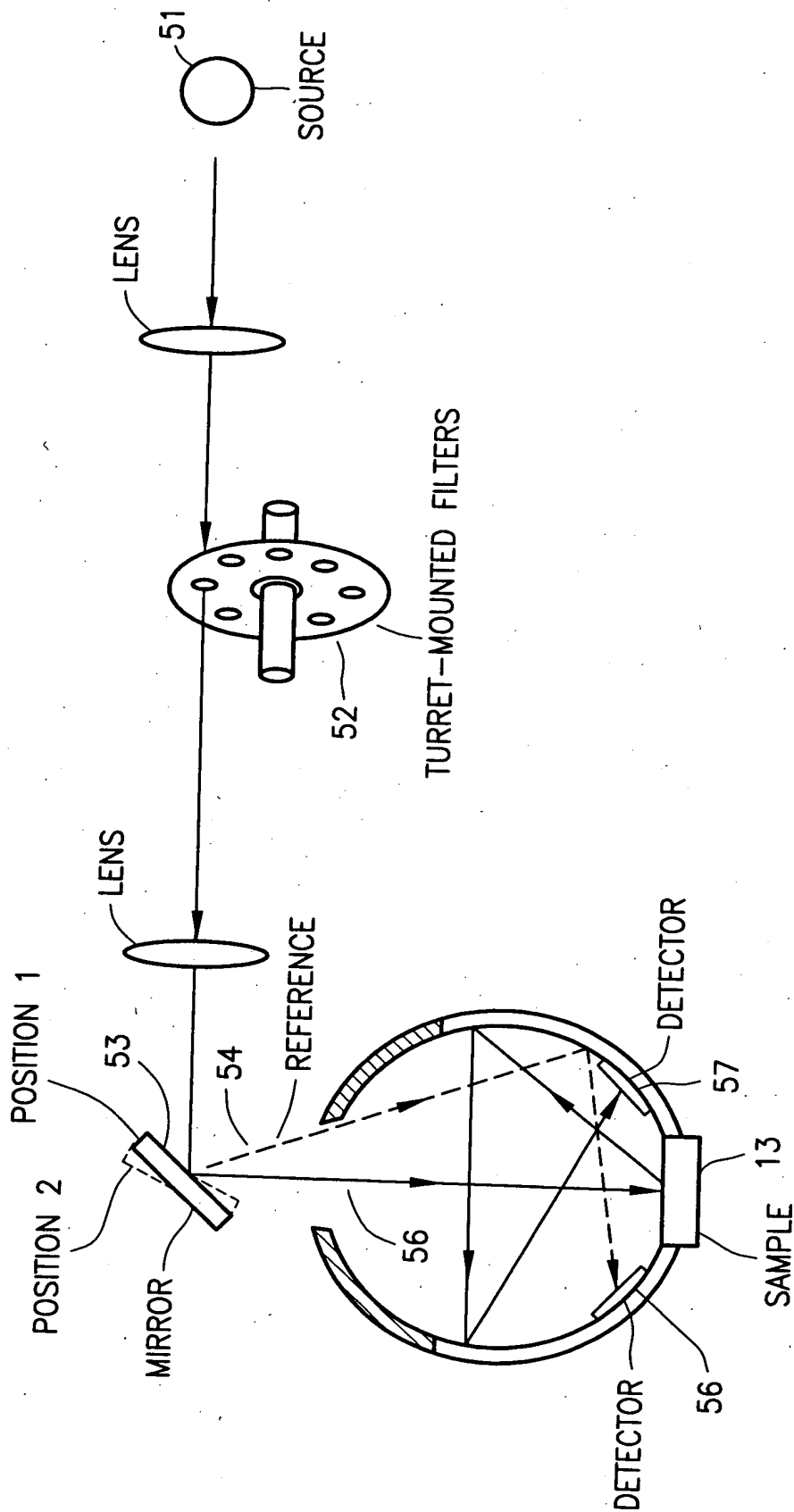


Fig. 5

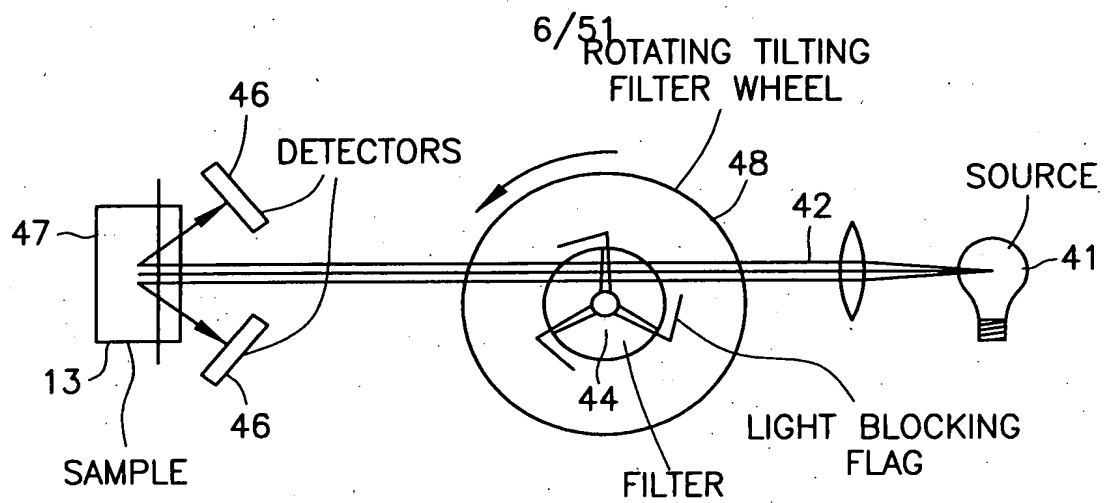


Fig. 6

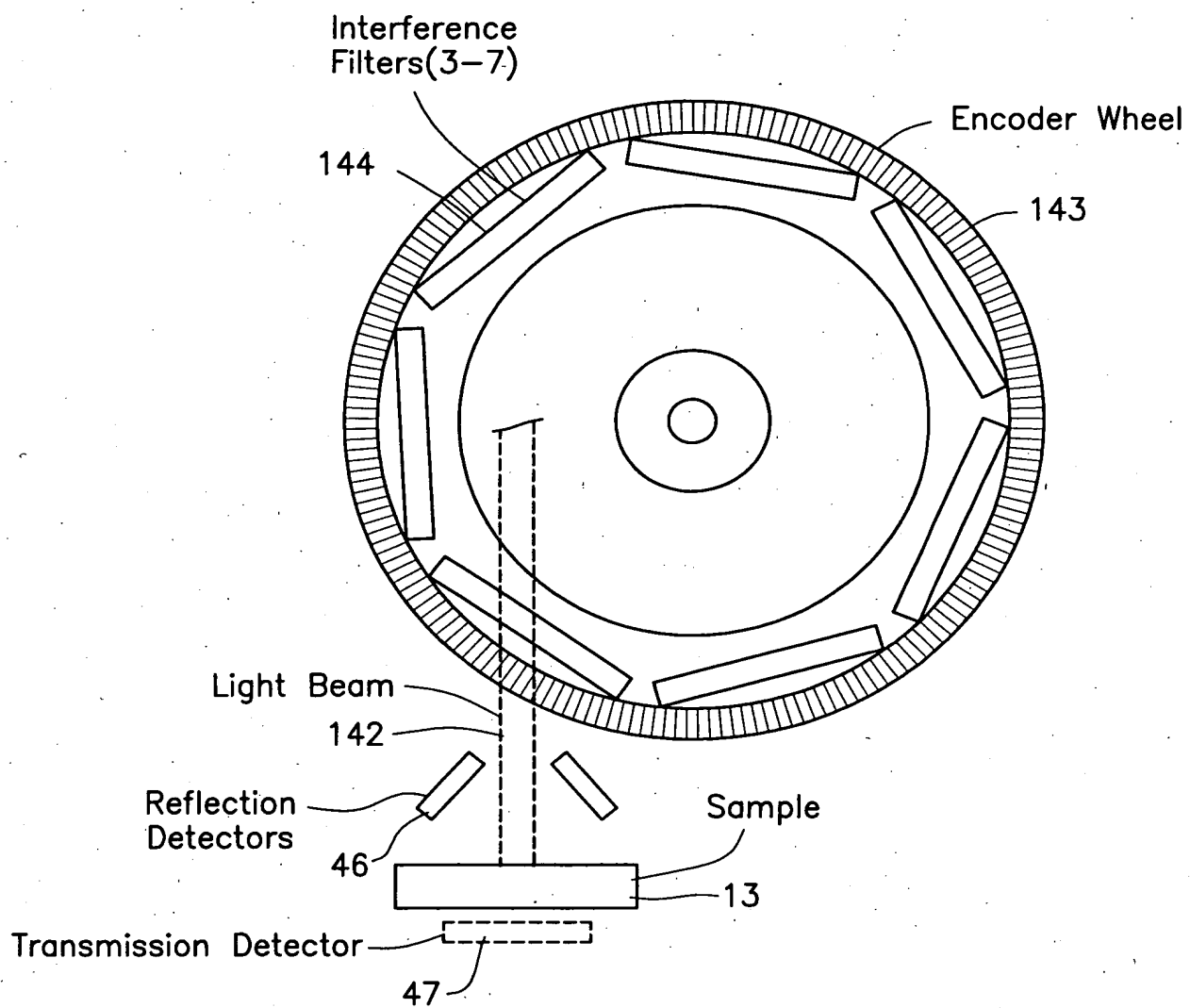


Fig. 7

8/51

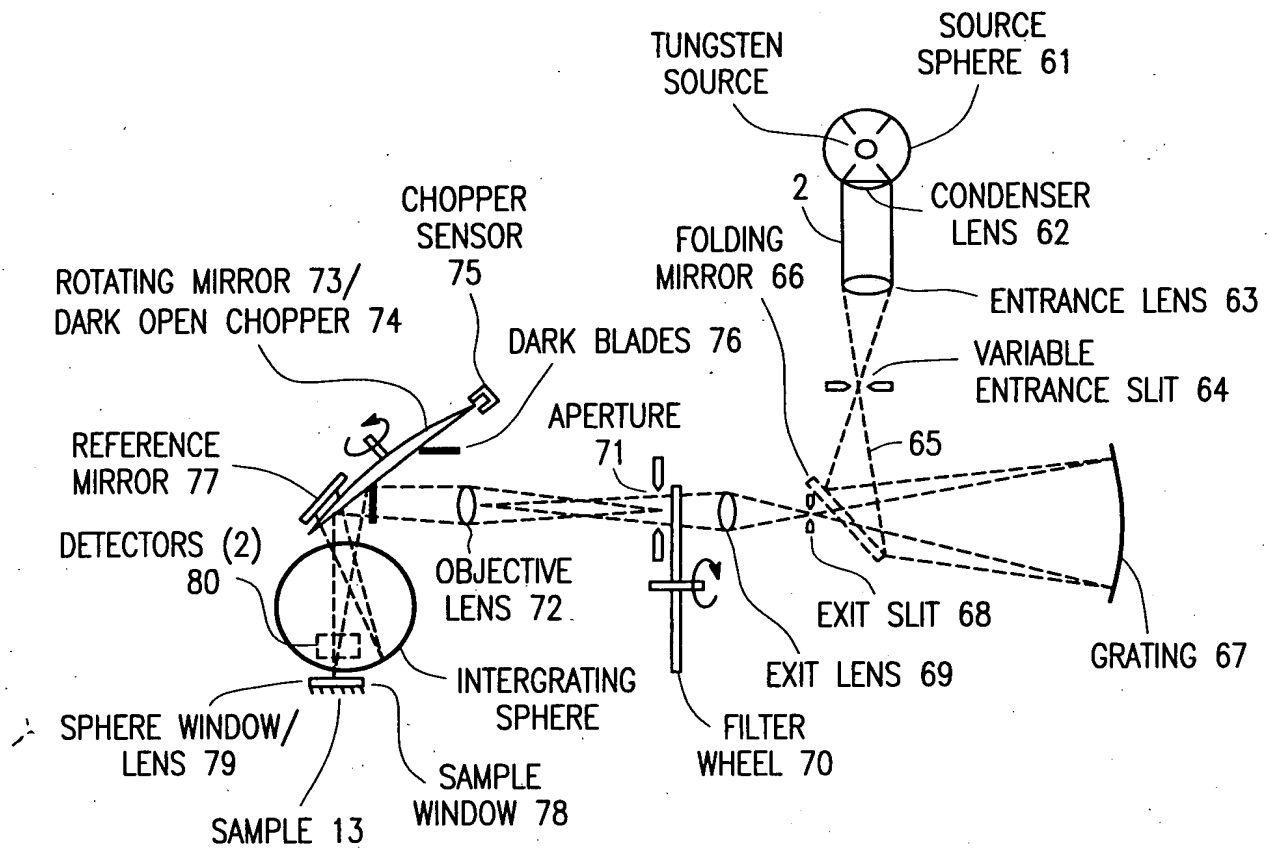


Fig. 8A

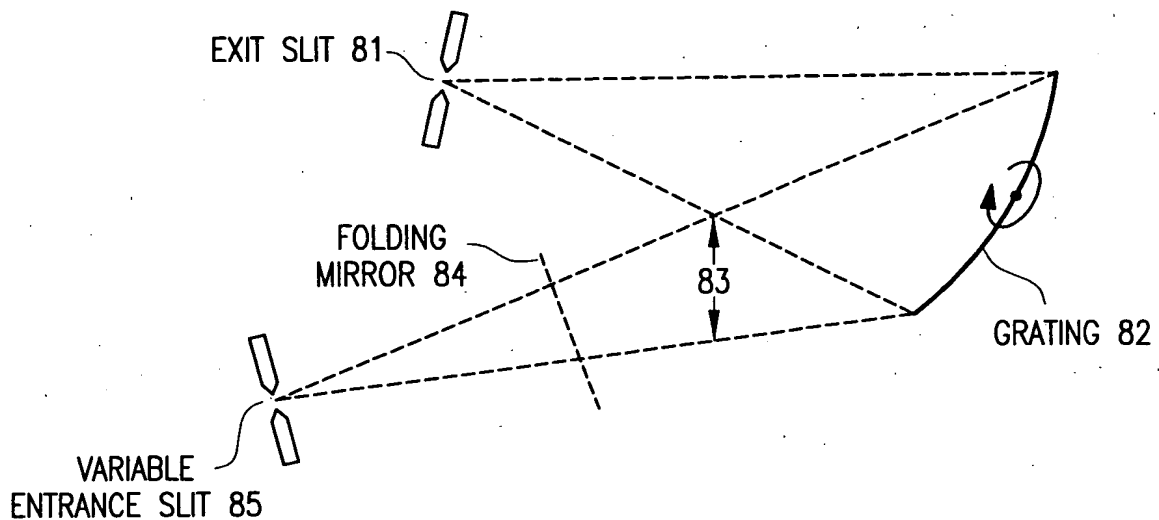


Fig. 8B

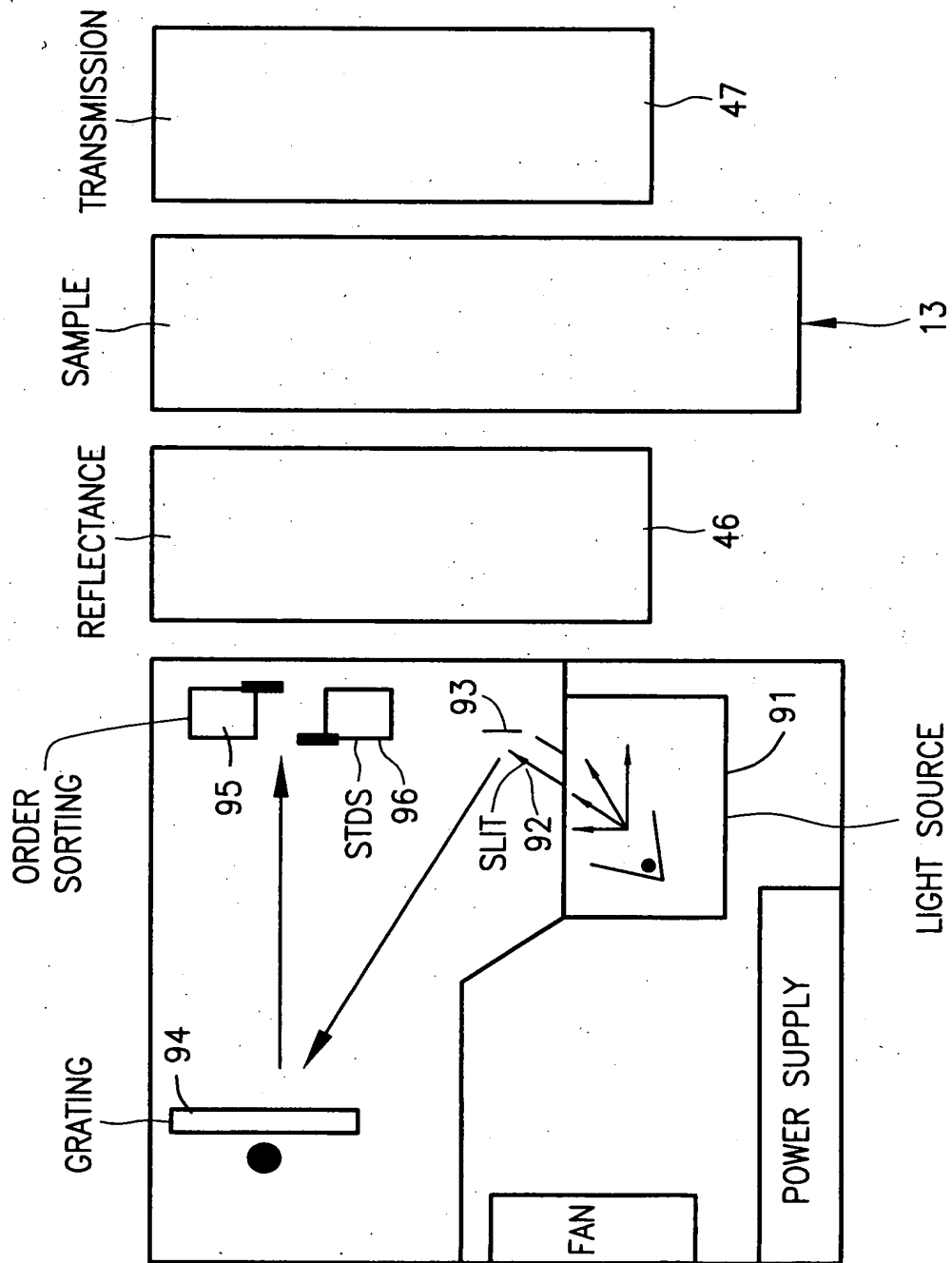


Fig. 9

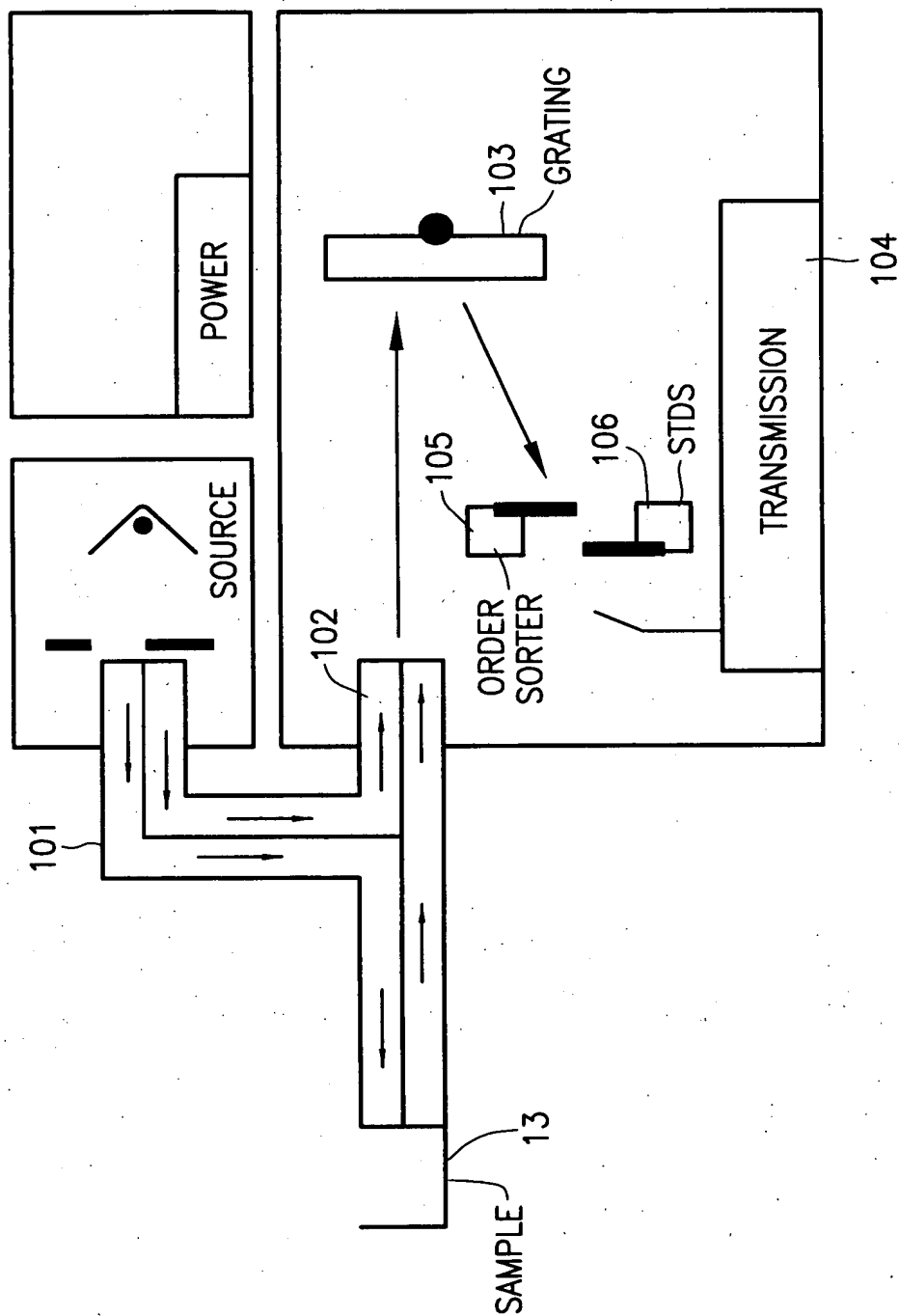


Fig. 10

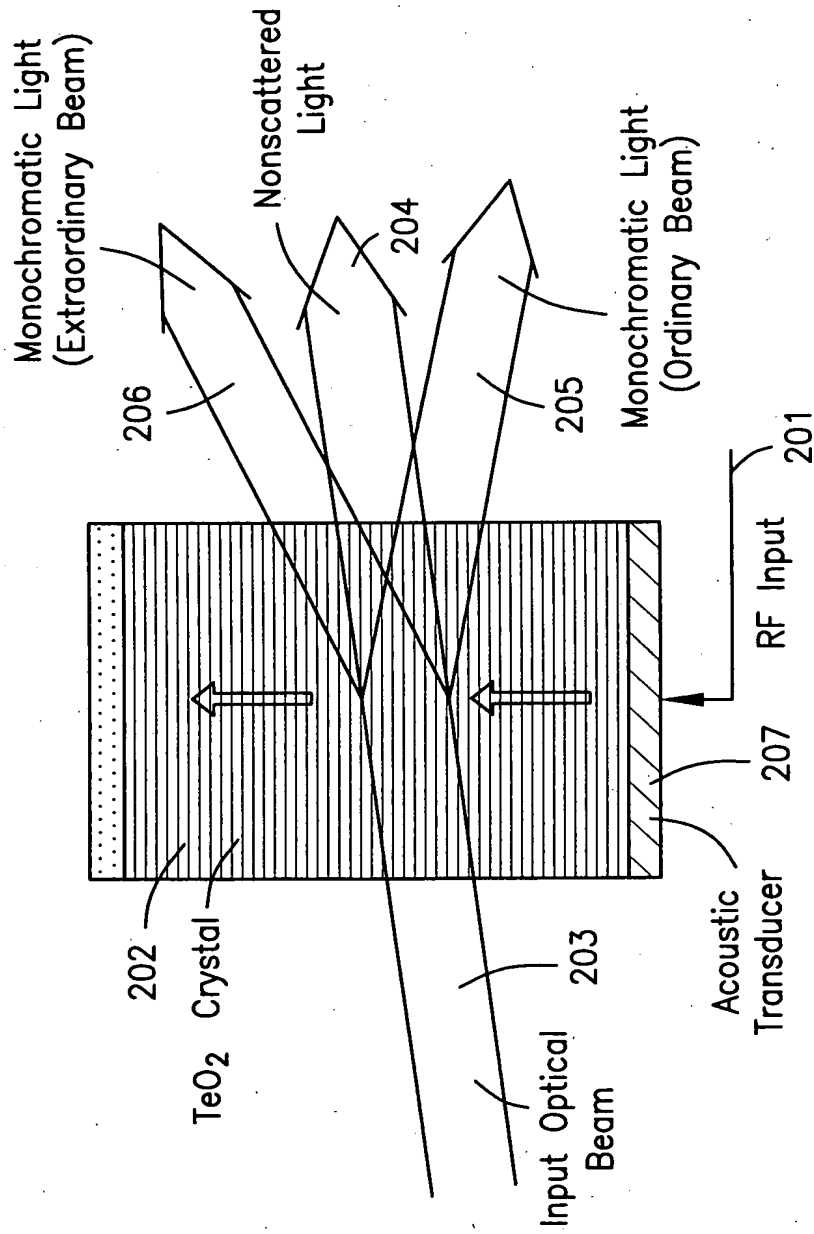


Fig. 11

12/51

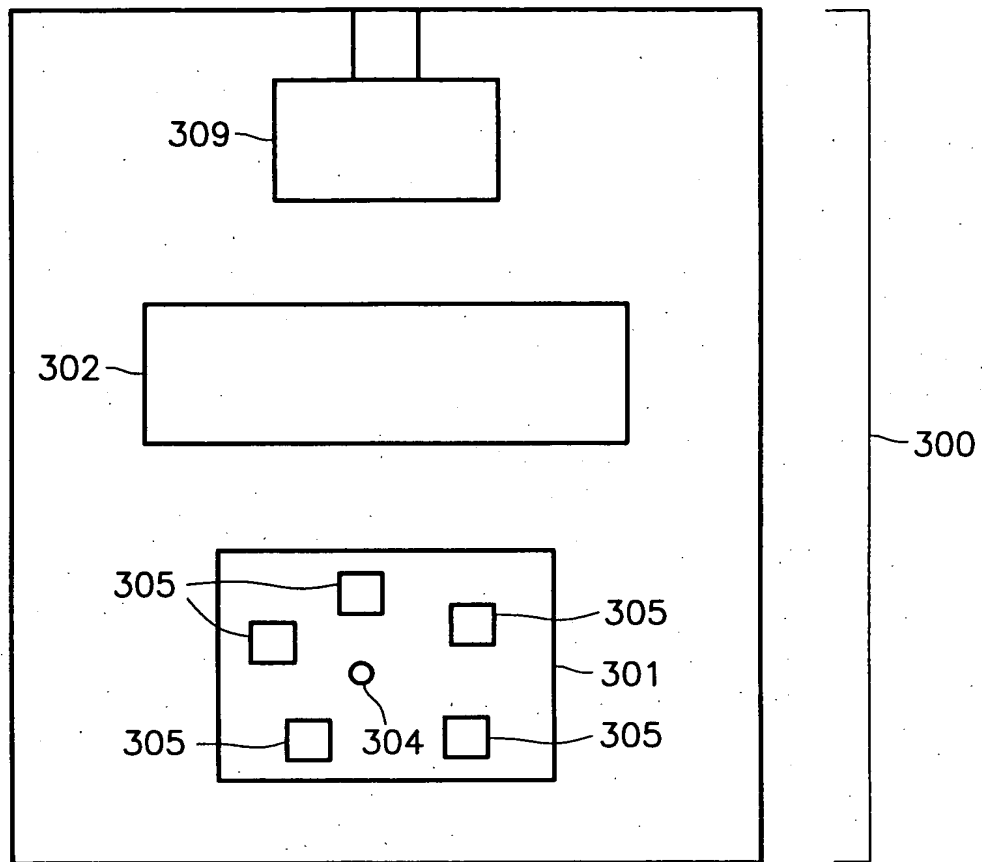


Fig. 12A

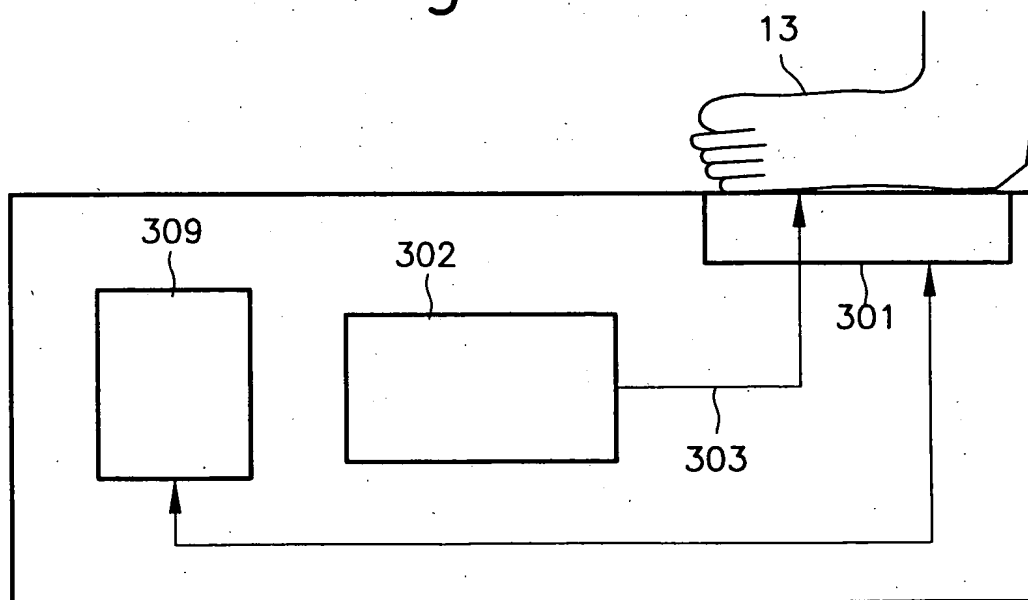


Fig. 12B

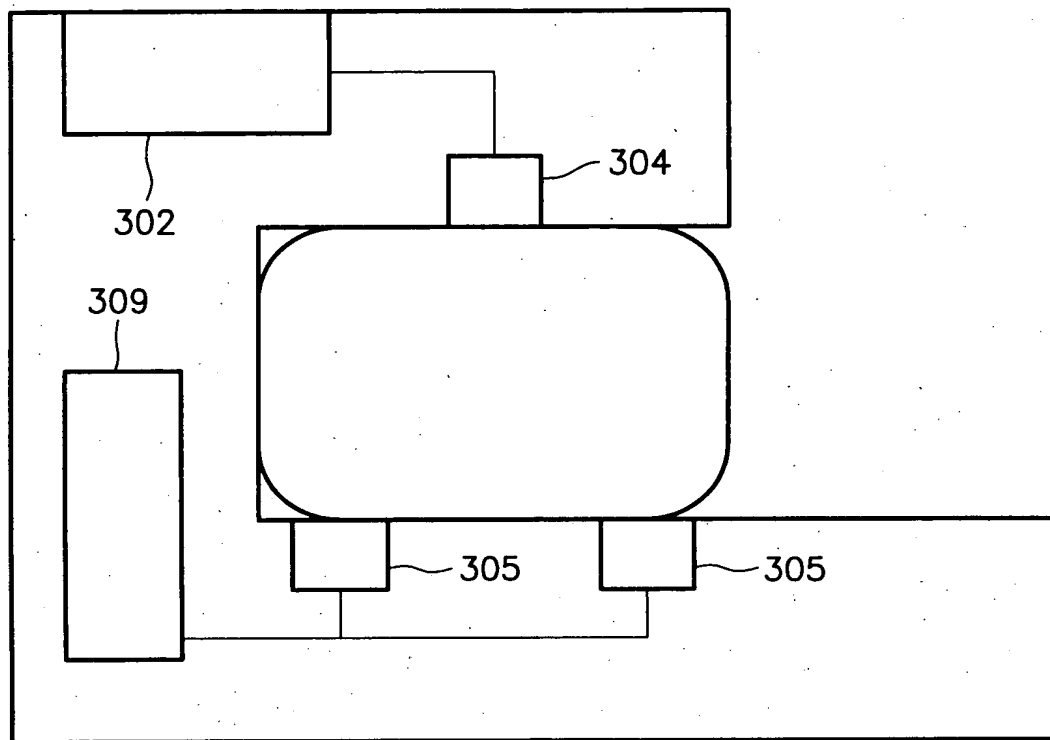


Fig. 12C

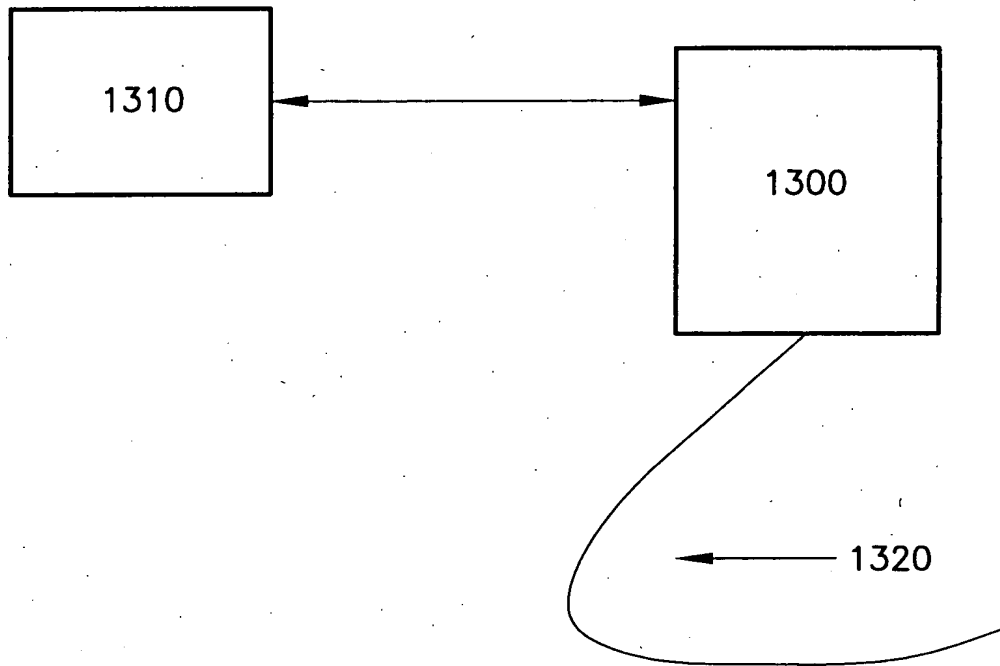


Fig. 13

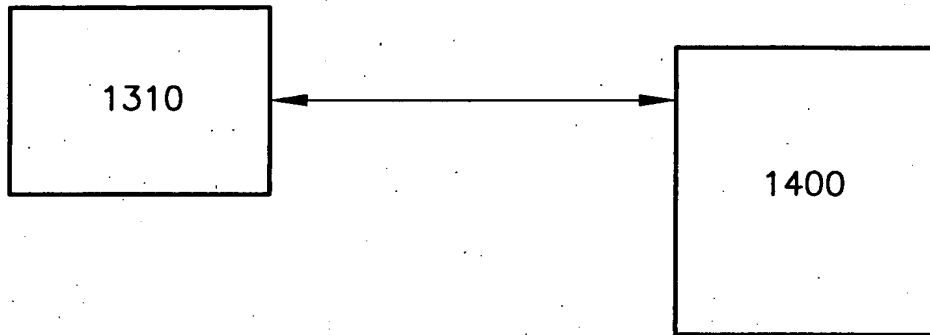


Fig. 14

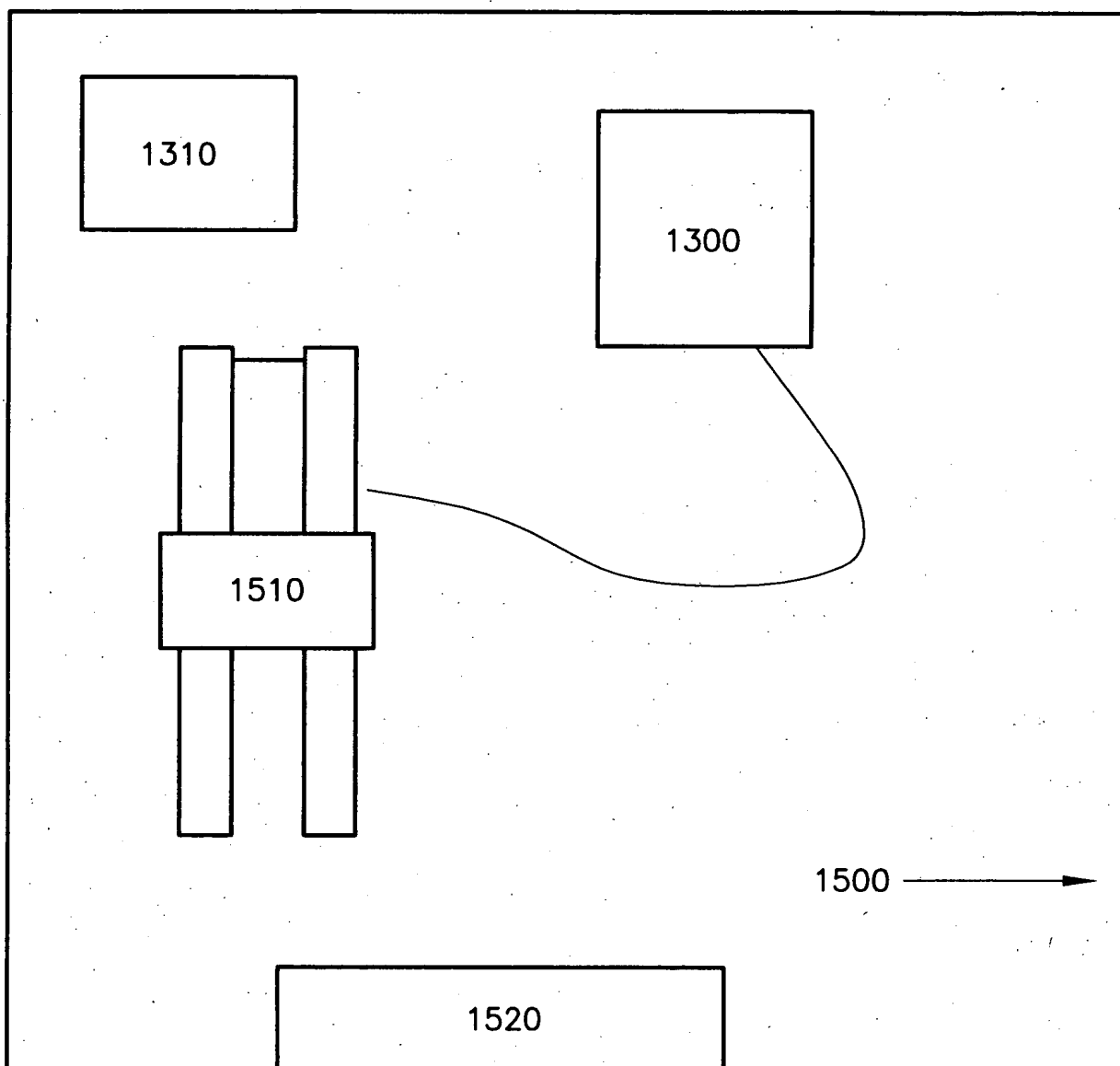


Fig. 15

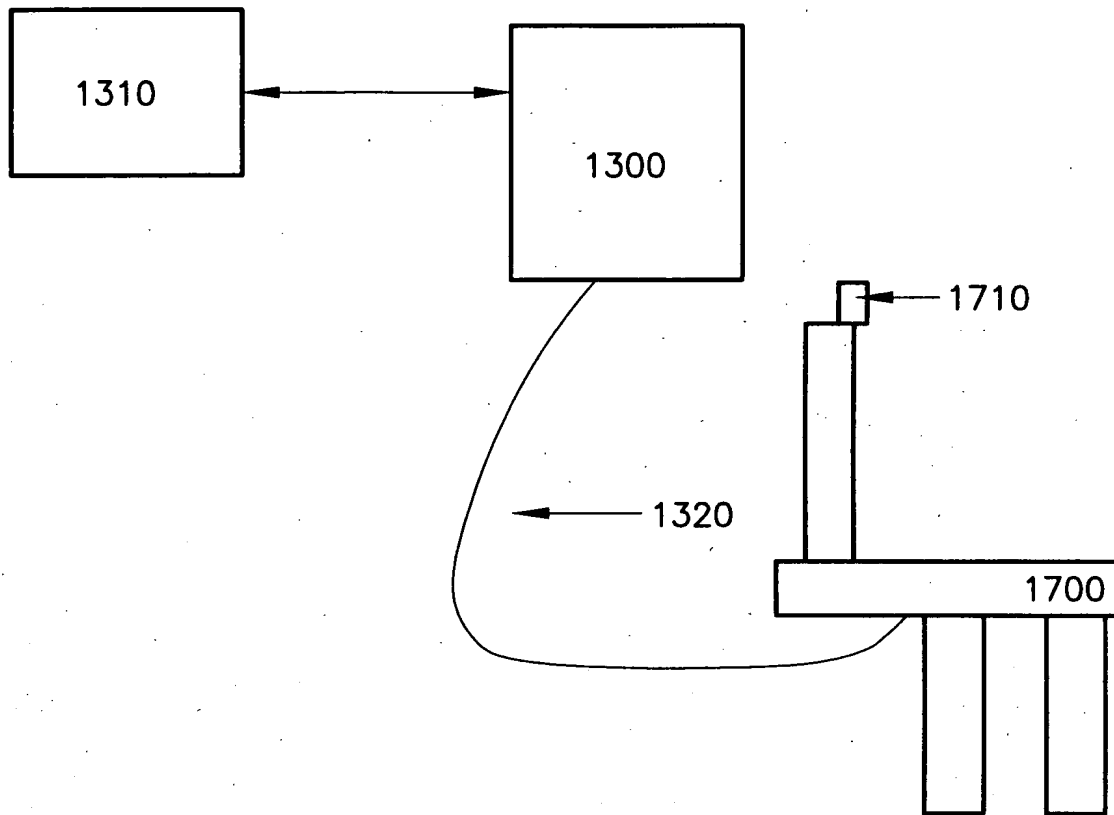


Fig. 16

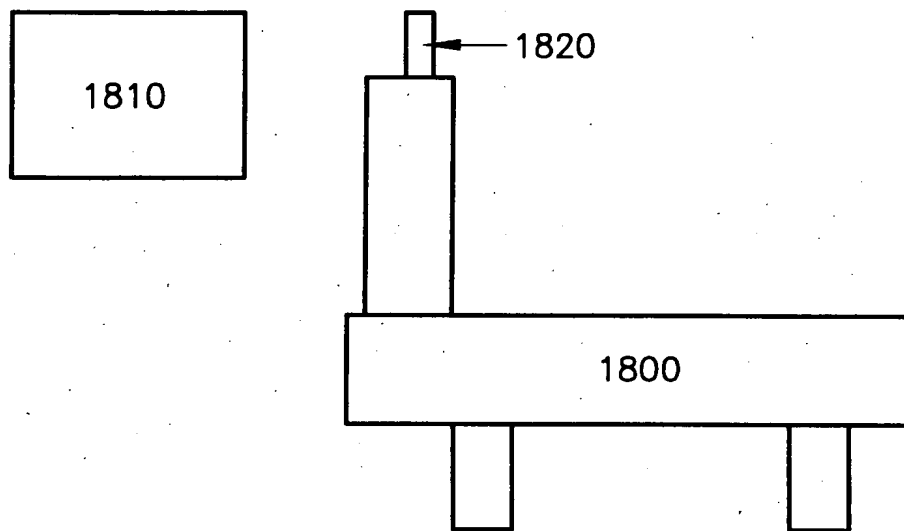


Fig. 17

DIFFUSE REFLECTANCE TRANSFORMS

SECOND TRANSFORM:

1ST TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U B L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	1	1	1	1	1	1	1	0	1	1	1
BASECORR	0	0	1	1	1	0	0	1	1	0	1	1	1
NORMALIZ	0	1	0	1	1	0	0	1	0	0	1	1	1
FIRSTDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
SECNDDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
MULTSCAT	0	0	0	1	1	0	1	1	0	0	1	1	1
KUNLMUNK	0	1	1	1	1	1	0	1	0	0	1	1	0
SMOOTHNG	0	1	1	1	1	1	1	0	0	0	1	1	1
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	0	0	1	0	0	0	0	1	0	0	0	0	0
SGDERIV2	0	0	1	0	0	0	0	1	0	0	0	0	0
ABS2REFL	0	1	1	1	1	1	0	1	0	0	1	1	0

Fig. 18

DIFFUSE REFLECTANCE RATIOS

DENOMINATOR TRANSFORM:

NUMERATOR TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U N L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	0	0	0	0	0	0	0	0	0	0	0
BASECORR	0	1	0	0	0	0	0	0	0	0	0	0	0
NORMALIZ	0	1	1	0	0	0	0	0	0	0	0	0	0
FIRSTDRV	1	0	0	1	0	0	0	0	0	0	0	0	0
SECNDDRV	1	0	0	0	1	0	0	0	0	0	0	0	0
MULTSCAT	0	1	0	0	0	1	0	0	0	0	0	0	0
KUNLMUNK	0	1	0	0	0	0	1	0	0	0	0	0	0
SMOOTHNG	0	1	0	0	0	0	0	1	0	0	0	0	0
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	1	0	0	0	0	0	0	0	0	0	1	0	0
SGDERIV2	1	0	0	0	0	0	0	0	0	0	0	1	0
ABS2REFL	0	1	0	0	0	0	0	0	0	0	0	0	1

Fig. 19

DIFFUSE TRANSMITTANCE TRANSFORMS

SECOND TRANSFORM:

1ST TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U B L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	1	1	1	1	0	1	1	0	1	1	1
BASECORR	0	0	1	1	1	0	0	1	1	0	1	1	1
NORMALIZ	0	1	0	1	1	0	0	1	0	0	1	1	1
FIRSTDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
SECNDDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
MULTSCAT	0	0	0	1	1	0	0	1	0	0	1	1	1
KUNLMUNK	0	0	0	0	0	0	0	0	0	0	0	0	0
SMOOTHNG	0	1	1	1	1	1	0	0	0	0	1	1	1
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	0	0	1	0	0	0	0	1	0	0	0	0	0
SGDERIV2	0	0	1	0	0	0	0	1	0	0	0	0	0
ABS2REFL	0	1	1	1	1	1	0	1	0	0	1	1	0

Fig. 20A

DIFFUSE TRANSMITTANCE RATIOS

DENOMINATOR TRANSFORM:

NUMERATOR TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U B L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	0	0	0	0	0	0	0	0	0	0	0
BASECORR	0	1	0	0	0	0	0	0	0	0	0	0	0
NORMALIZ	0	1	1	0	0	0	0	0	0	0	0	0	0
FIRSTDRV	1	0	0	1	0	0	0	0	0	0	0	0	0
SECNDDRV	1	0	0	0	1	0	0	0	0	0	0	0	0
MULTSCAT	0	1	0	0	0	1	0	0	0	0	0	0	0
KUNLMUNK	0	0	0	0	0	0	0	0	0	0	0	0	0
SMOOTHNG	0	1	0	0	0	0	0	1	0	0	0	0	0
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	1	0	0	0	0	0	0	0	0	0	1	0	0
SGDERIV2	1	0	0	0	0	0	0	0	0	0	0	1	0
ABS2REFL	0	1	0	0	0	0	0	0	0	0	0	0	1

Fig. 20B

CLEAR TRANSMITTANCE TRANSFORMS

SECOND TRANSFORM:

1ST TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U B L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	1	1	1	0	0	1	1	0	1	1	1
BASECORR	0	0	1	1	1	0	0	1	1	0	1	1	1
NORMALIZ	0	1	0	1	1	0	0	1	0	0	1	1	1
FIRSTDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
SECNDDRV	0	0	1	0	0	0	0	1	0	0	0	0	0
MULTSCAT	0	0	0	0	0	0	0	0	0	0	0	0	0
KUNLMUNK	0	0	0	0	0	0	0	0	0	0	0	0	0
SMOOTHNG	0	1	1	1	1	0	0	0	0	0	1	1	1
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	0	0	1	0	0	0	0	1	0	0	0	0	0
SGDERIV2	0	0	1	0	0	0	0	1	0	0	0	0	0
ABS2REFL	0	1	1	1	1	0	0	1	0	0	1	1	0

Fig. 21A

CLEAR TRANSMITTANCE RATIOS

DENOMINATOR TRANSFORM:

NUMERATOR TRANSFORM	N U L L S	B A S E C O R R	N O R M A L I Z	F I R S T D R V	S E C N D D R V	M U L T S C A T	K U N L M U N K	S M O O T H N G	R A T I O	M E A N C N T R	S G D E R I V 1	S G D E R I V 2	A B S 2 R E F L
NULLS	1	1	0	0	0	0	0	0	0	0	0	0	0
BASECORR	0	1	0	0	0	0	0	0	0	0	0	0	0
NORMALIZ	0	1	1	0	0	0	0	0	0	0	0	0	0
FIRSTDRV	1	0	0	1	0	0	0	0	0	0	0	0	0
SECNDDRV	1	0	0	0	1	0	0	0	0	0	0	0	0
MULTSCAT	0	0	0	0	0	0	0	0	0	0	0	0	0
KUNLMUNK	0	0	0	0	0	0	0	0	0	0	0	0	0
SMOOTHNG	0	1	0	0	0	0	0	1	0	0	0	0	0
RATIO	0	0	0	0	0	0	0	0	0	0	0	0	0
MEANCNTR	0	0	0	0	0	0	0	0	0	0	0	0	0
SGDERIV1	1	0	0	0	0	0	0	0	0	0	1	0	0
SGDERIV2	1	0	0	0	0	0	0	0	0	0	0	1	0
ABS2REFL	0	1	0	0	0	0	0	0	0	0	0	0	1

Fig. 21B

25/51

DERIVATIVE SPACING:

SPACING = INT ($n^{1.4}$), $n = 1 : 10$
= 1, 2, 4, 6, 9, 12, 15, 18, 21, 25

Fig. 22

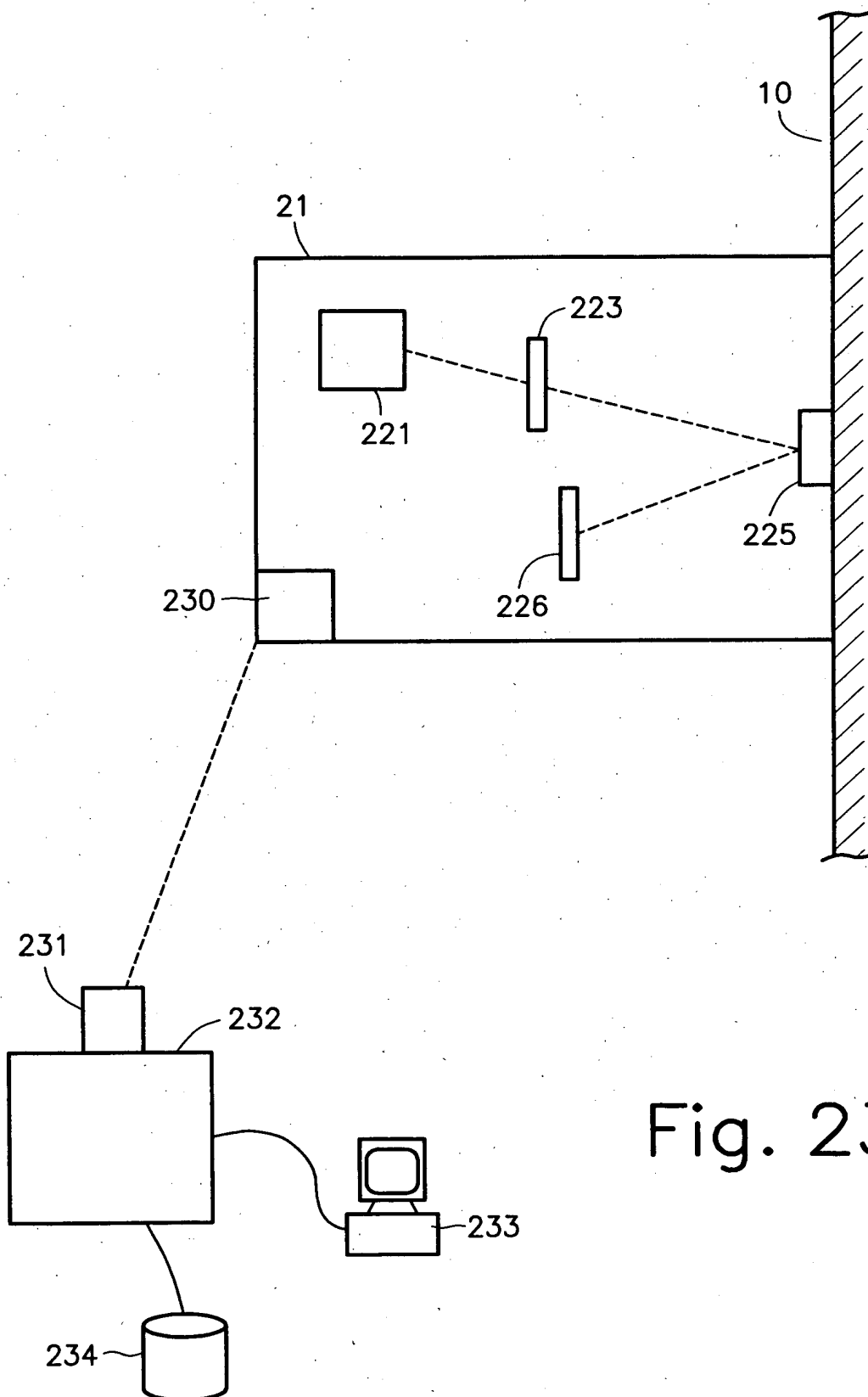


Fig. 23A

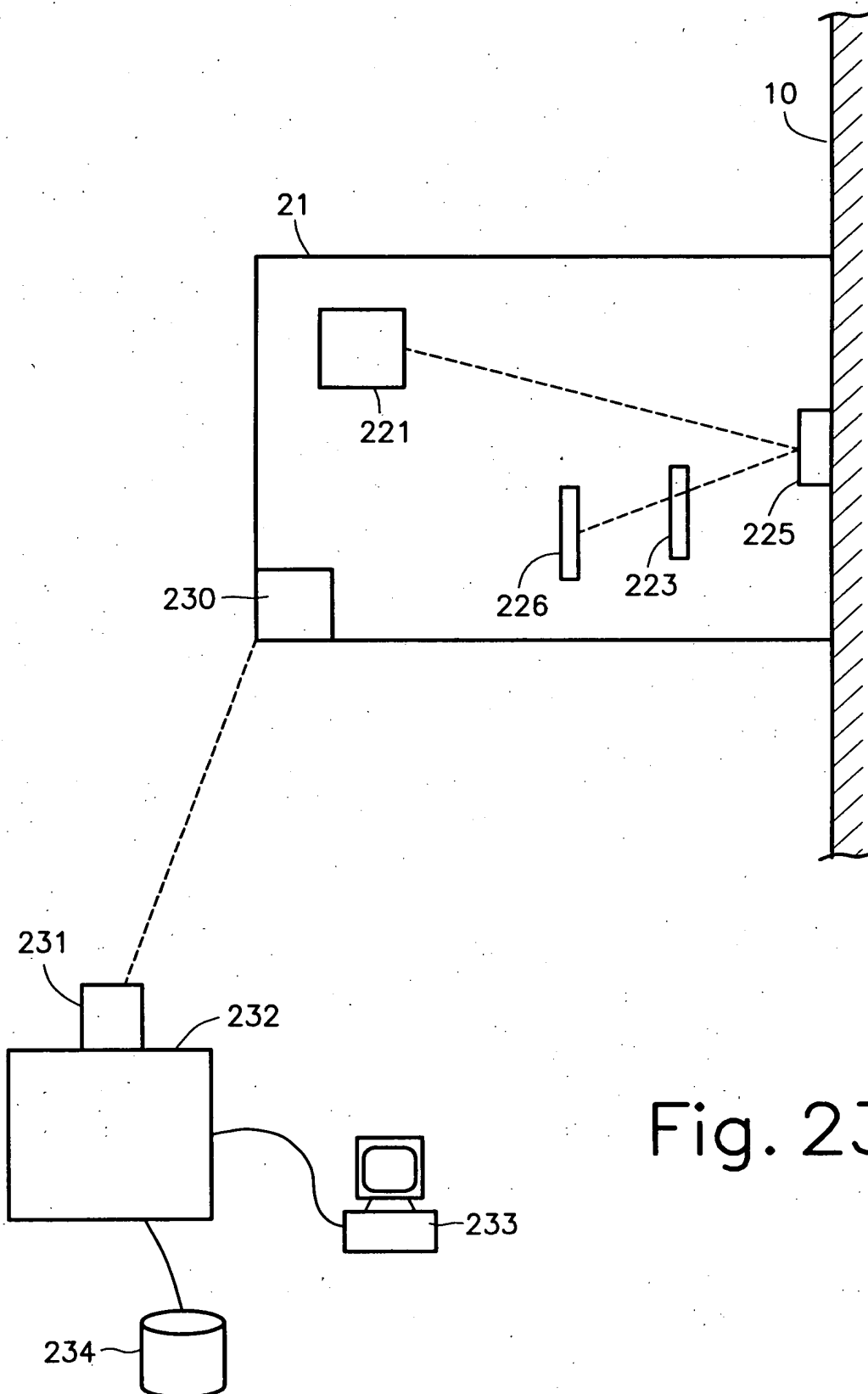


Fig. 23B

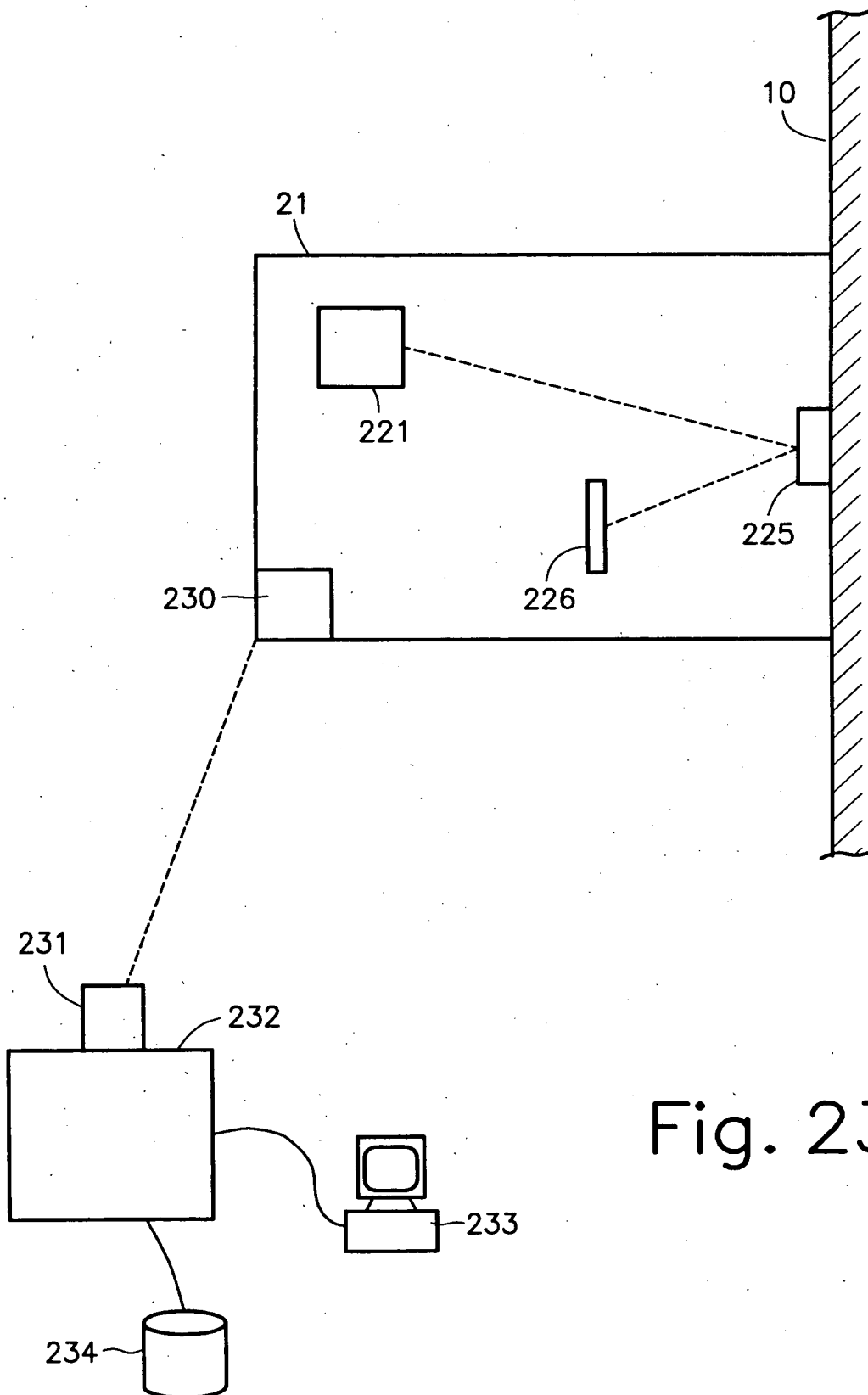


Fig. 23C

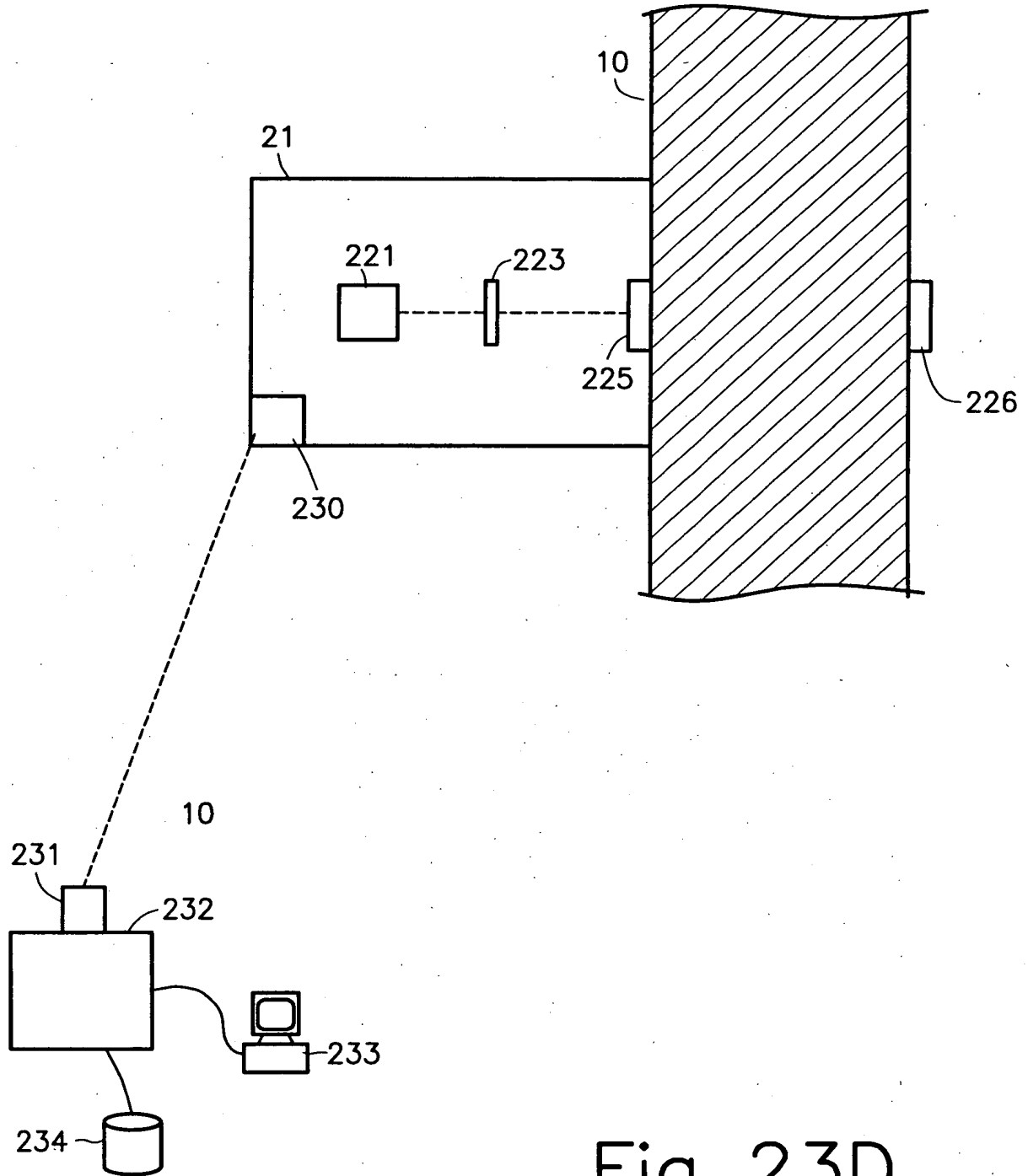


Fig. 23D

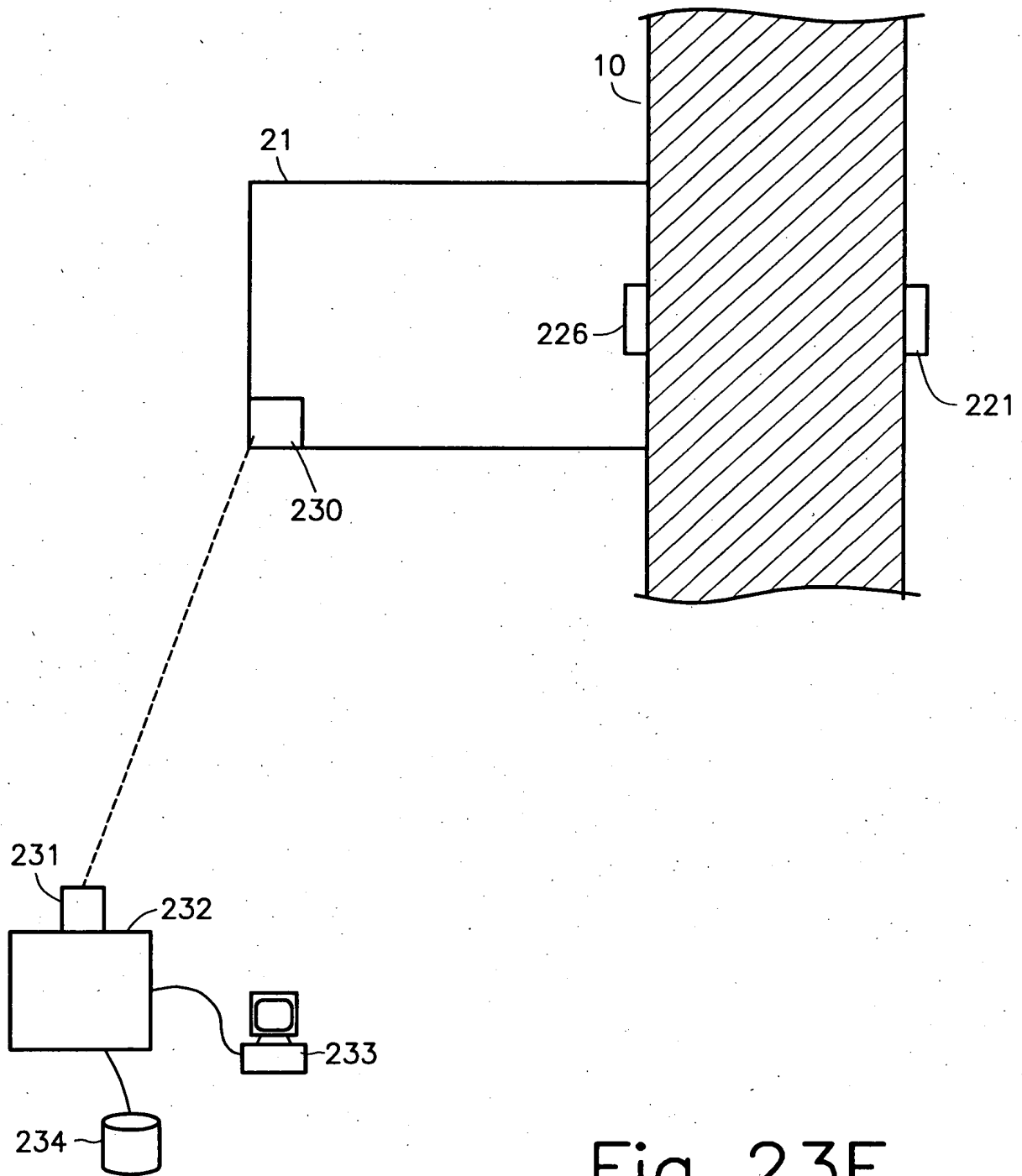


Fig. 23E

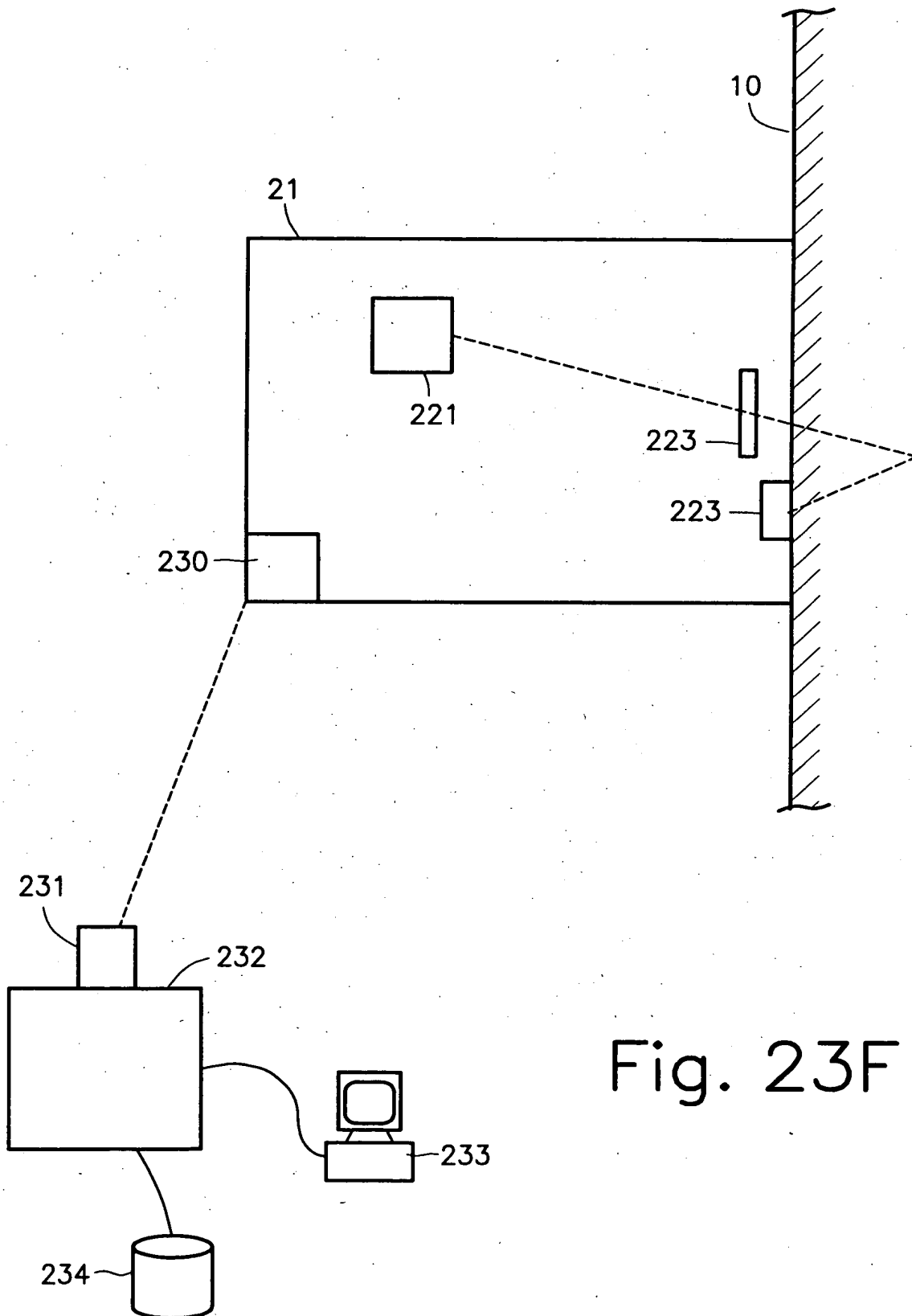


Fig. 23F

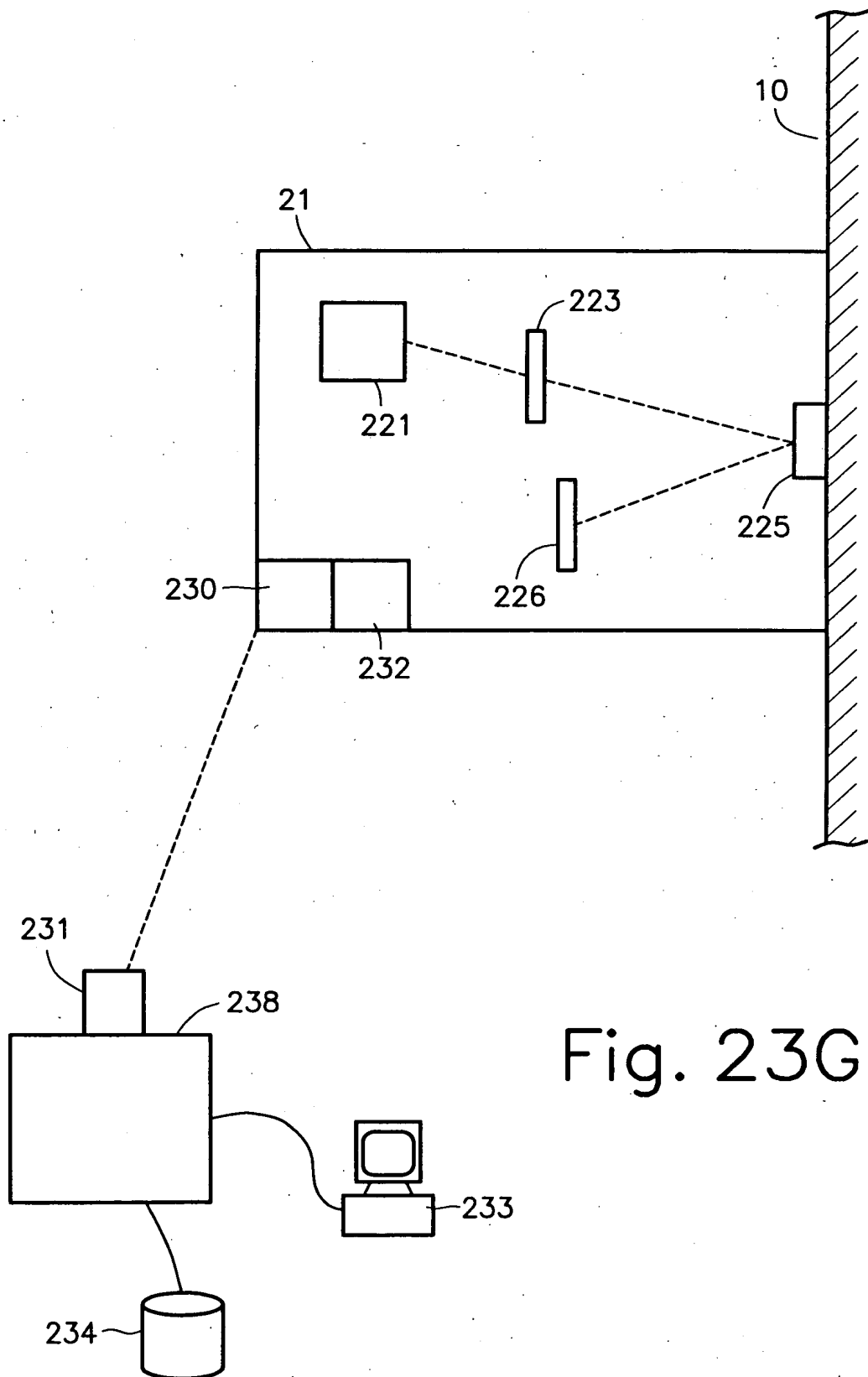


Fig. 23G

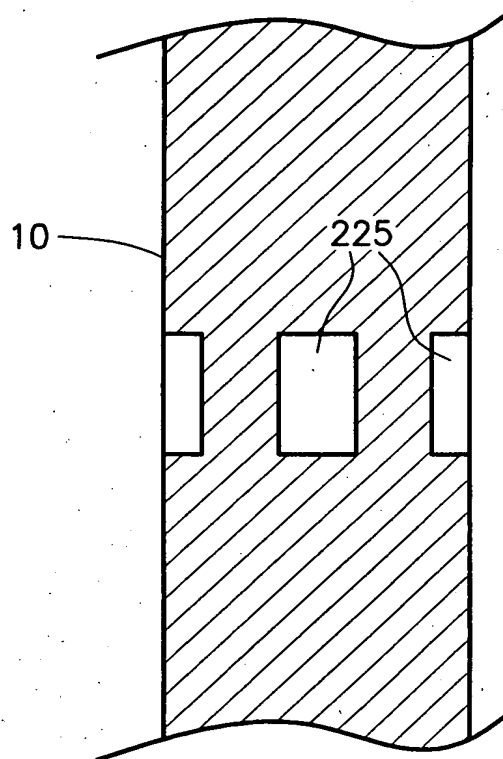


Fig. 24

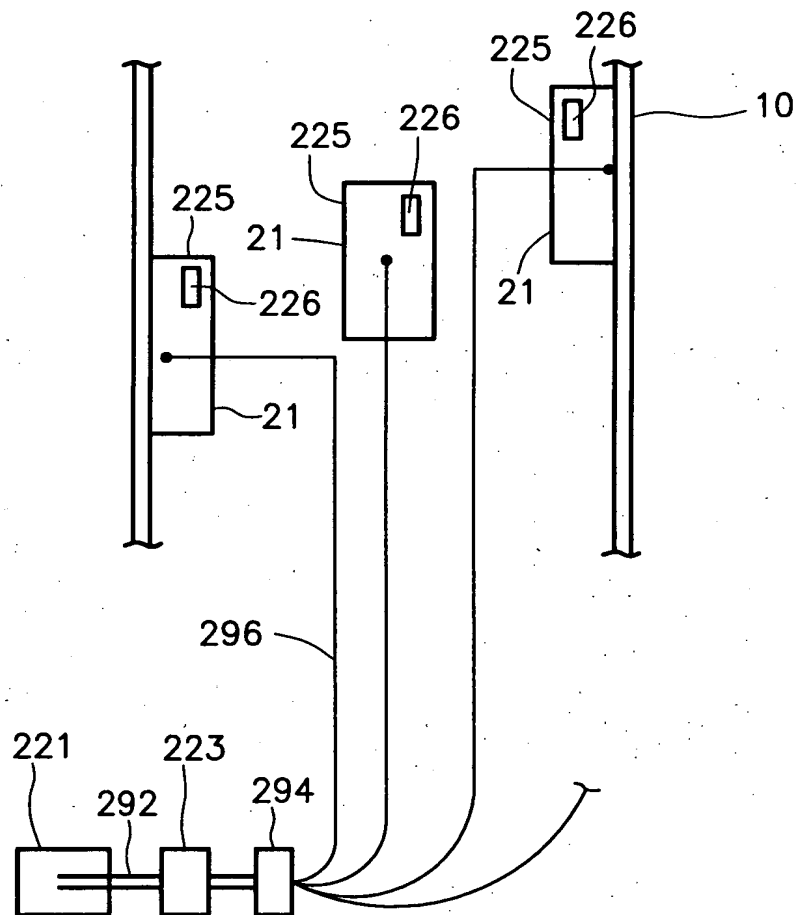


Fig. 25

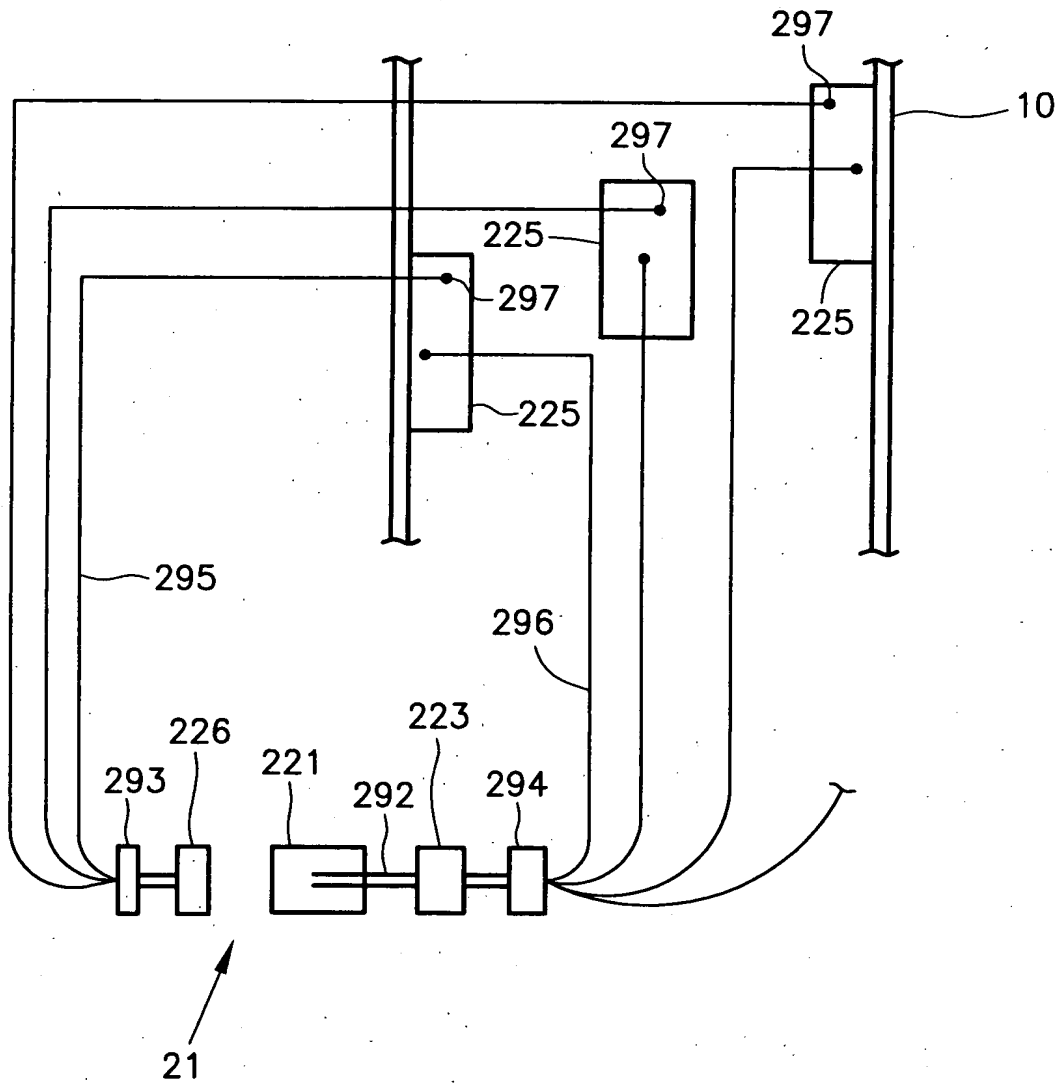


Fig. 26

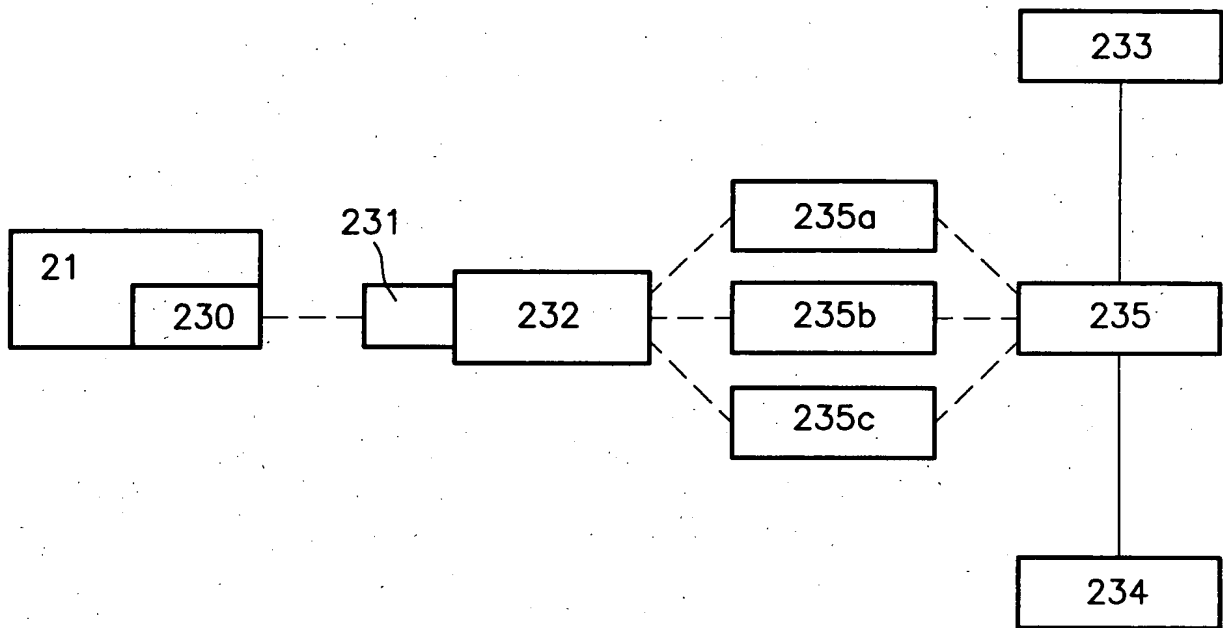


Fig. 27

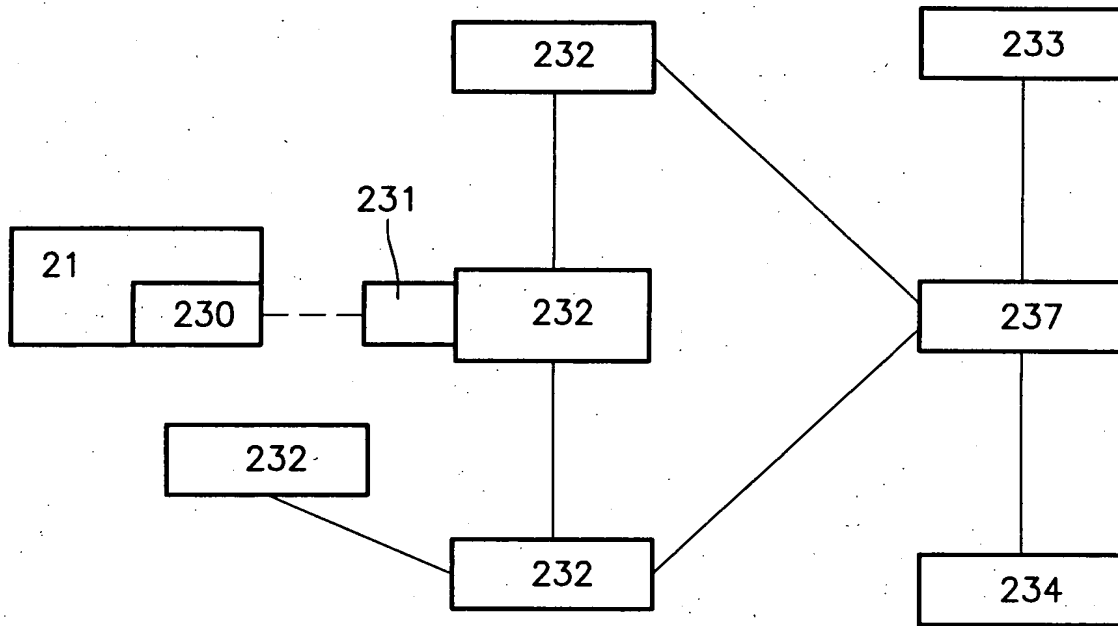


Fig. 28

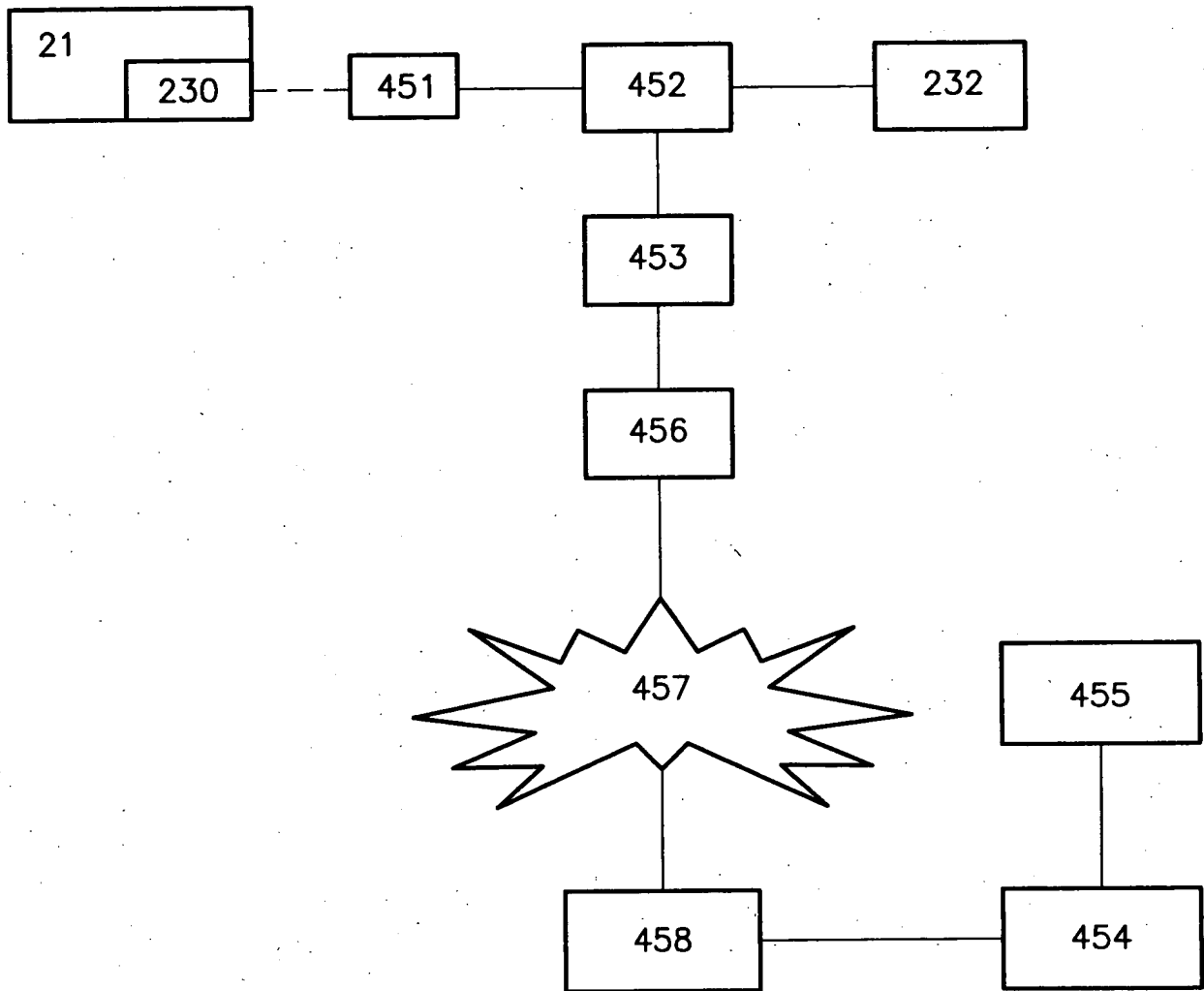


Fig. 29

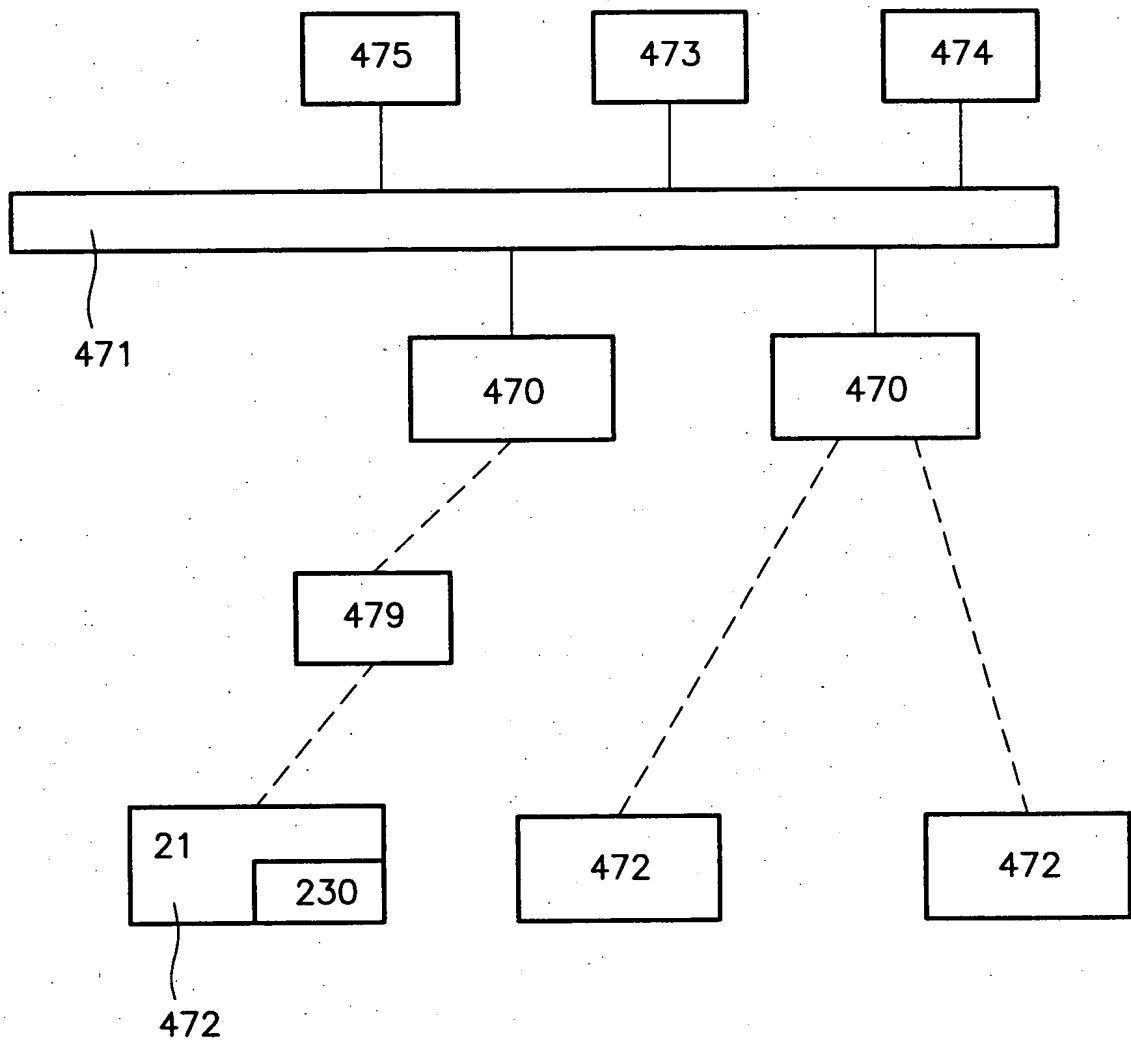


Fig. 30

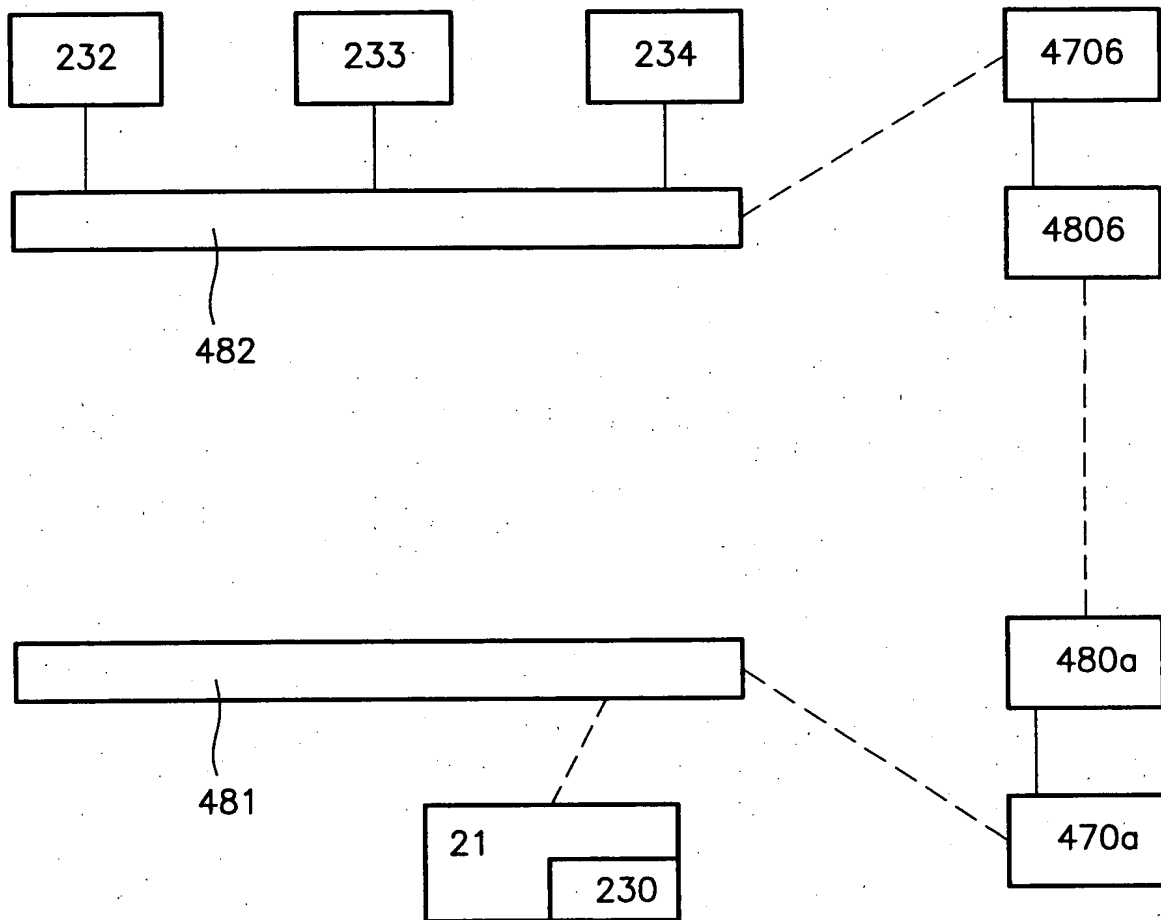


Fig. 31

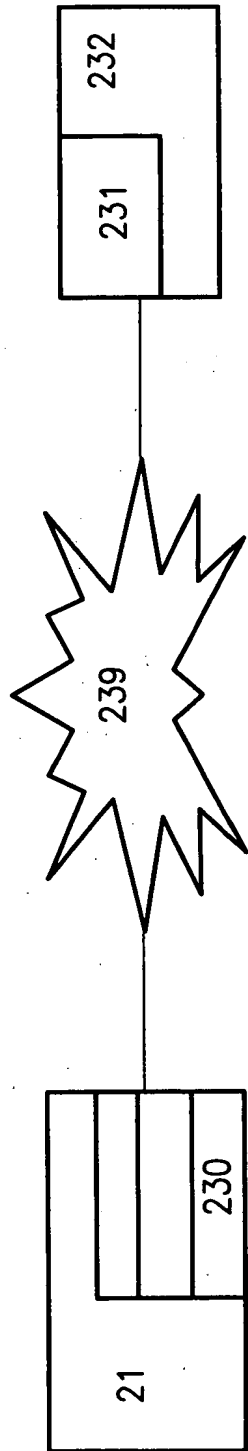


Fig. 32

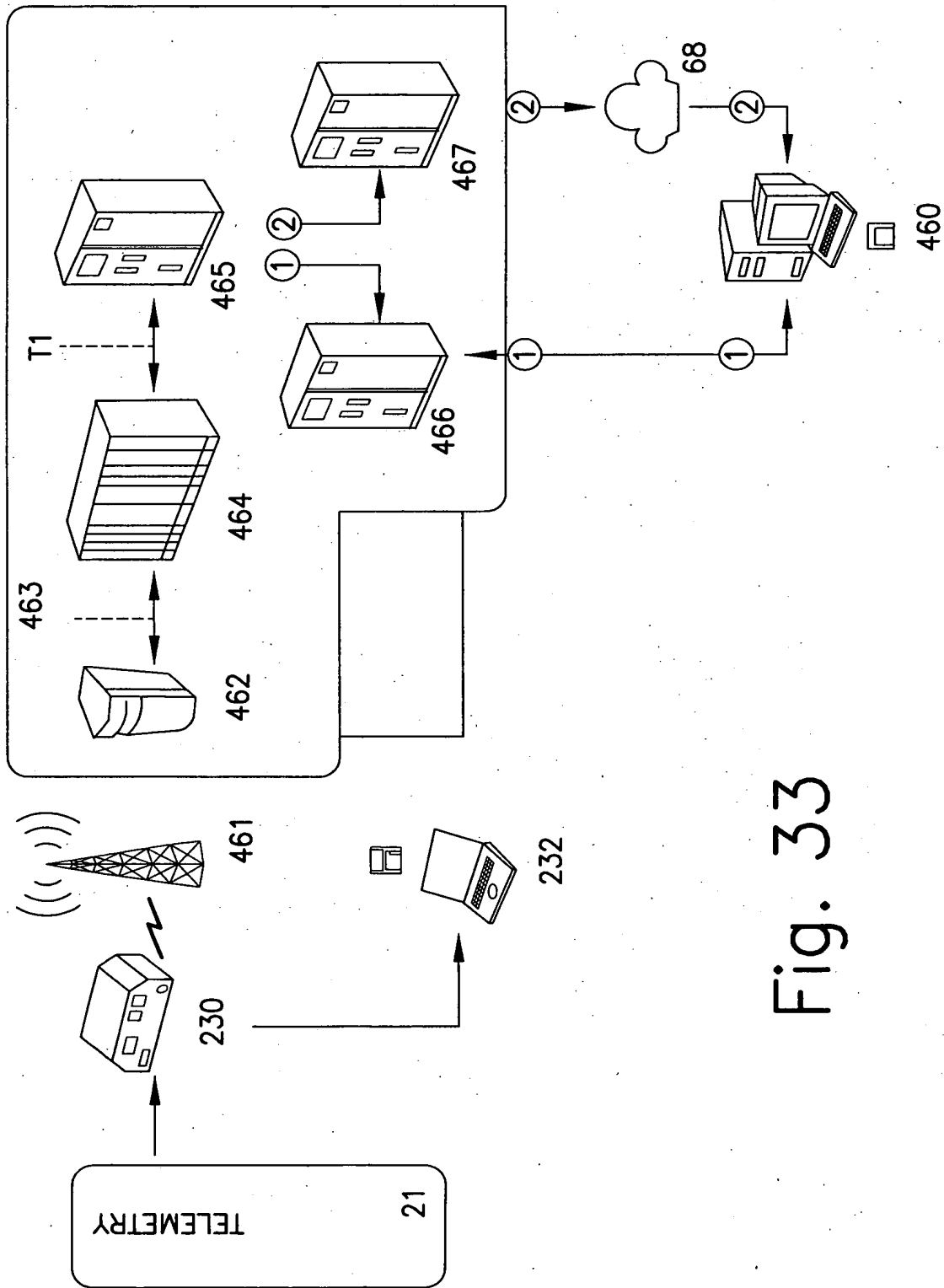


Fig. 33

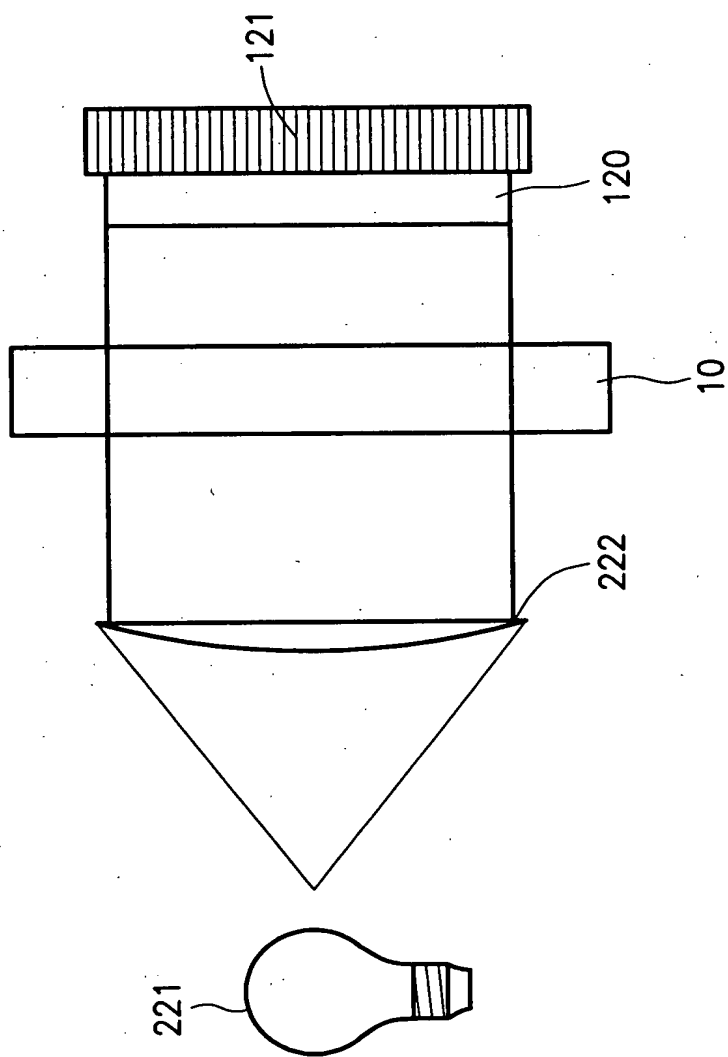


Fig. 34a

43/51

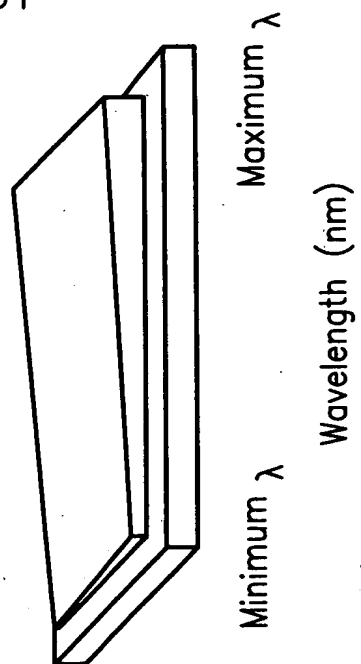


Fig. 34b

44/51

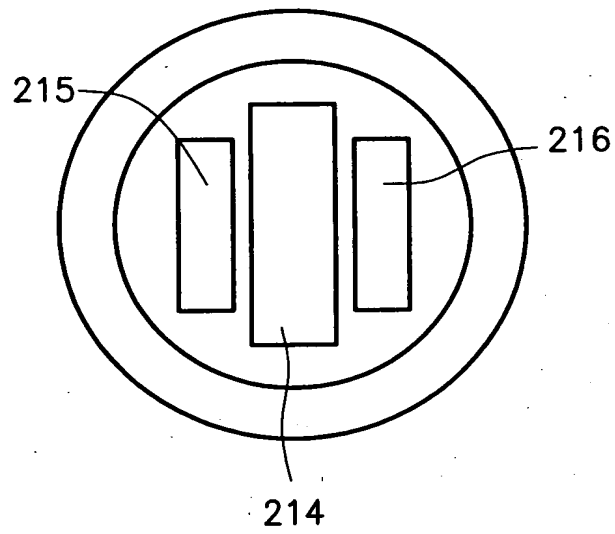


Fig. 35a

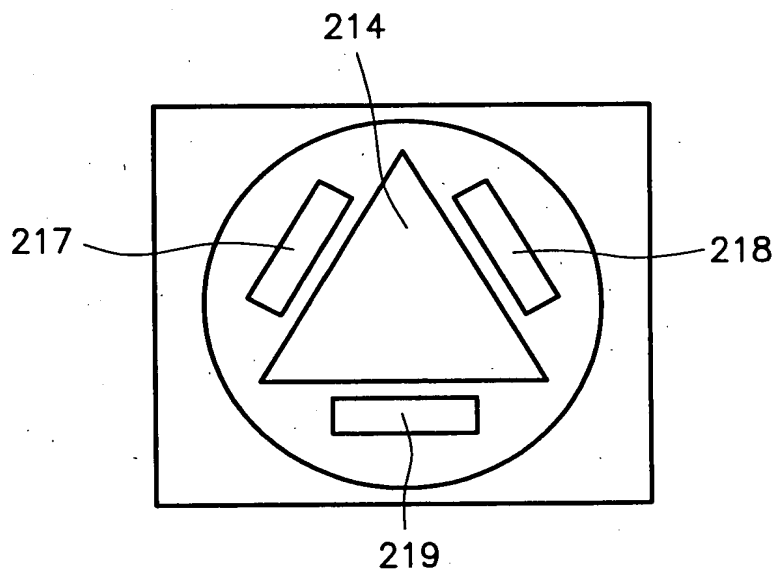
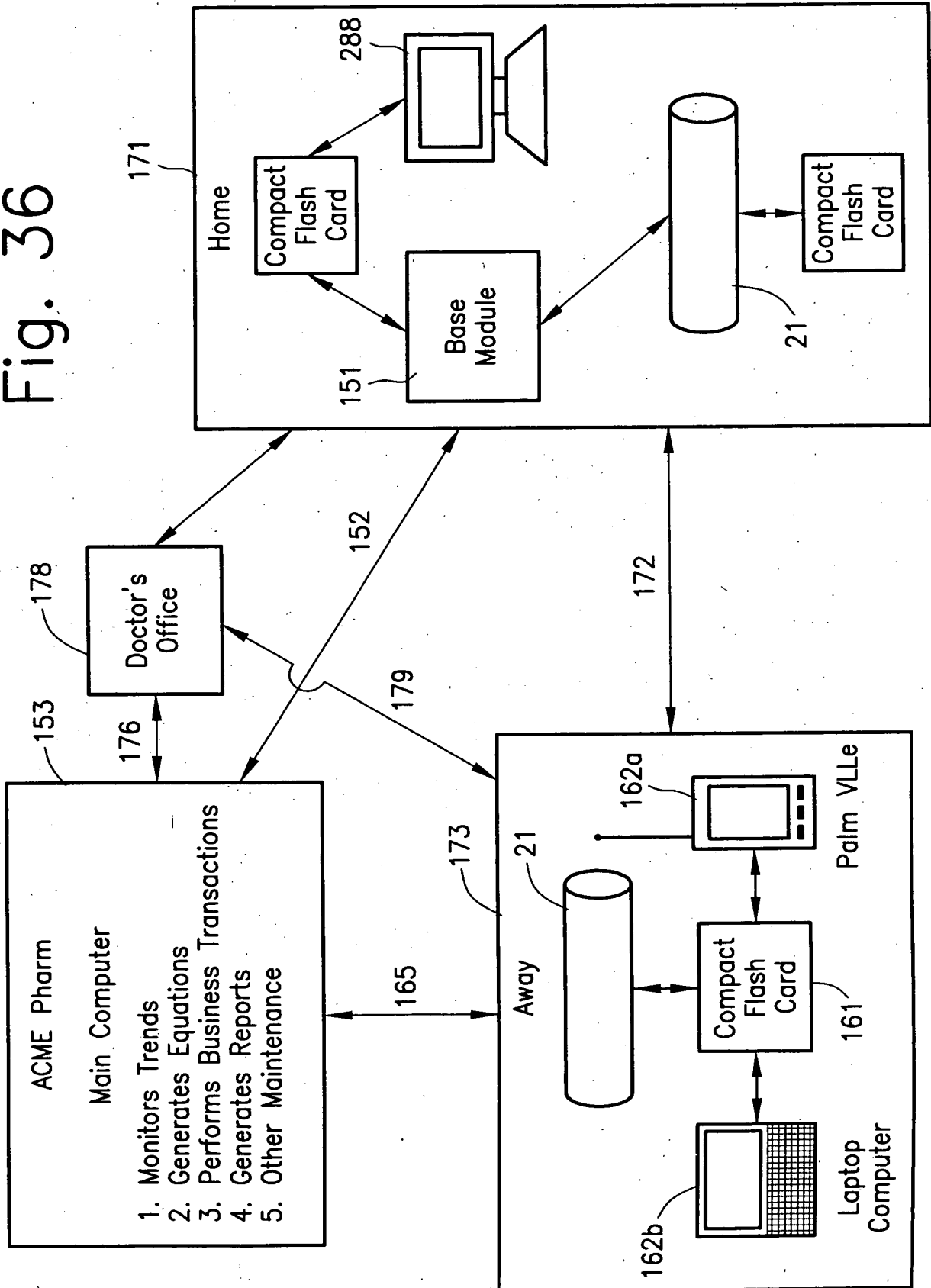


Fig. 35b

Fig. 36



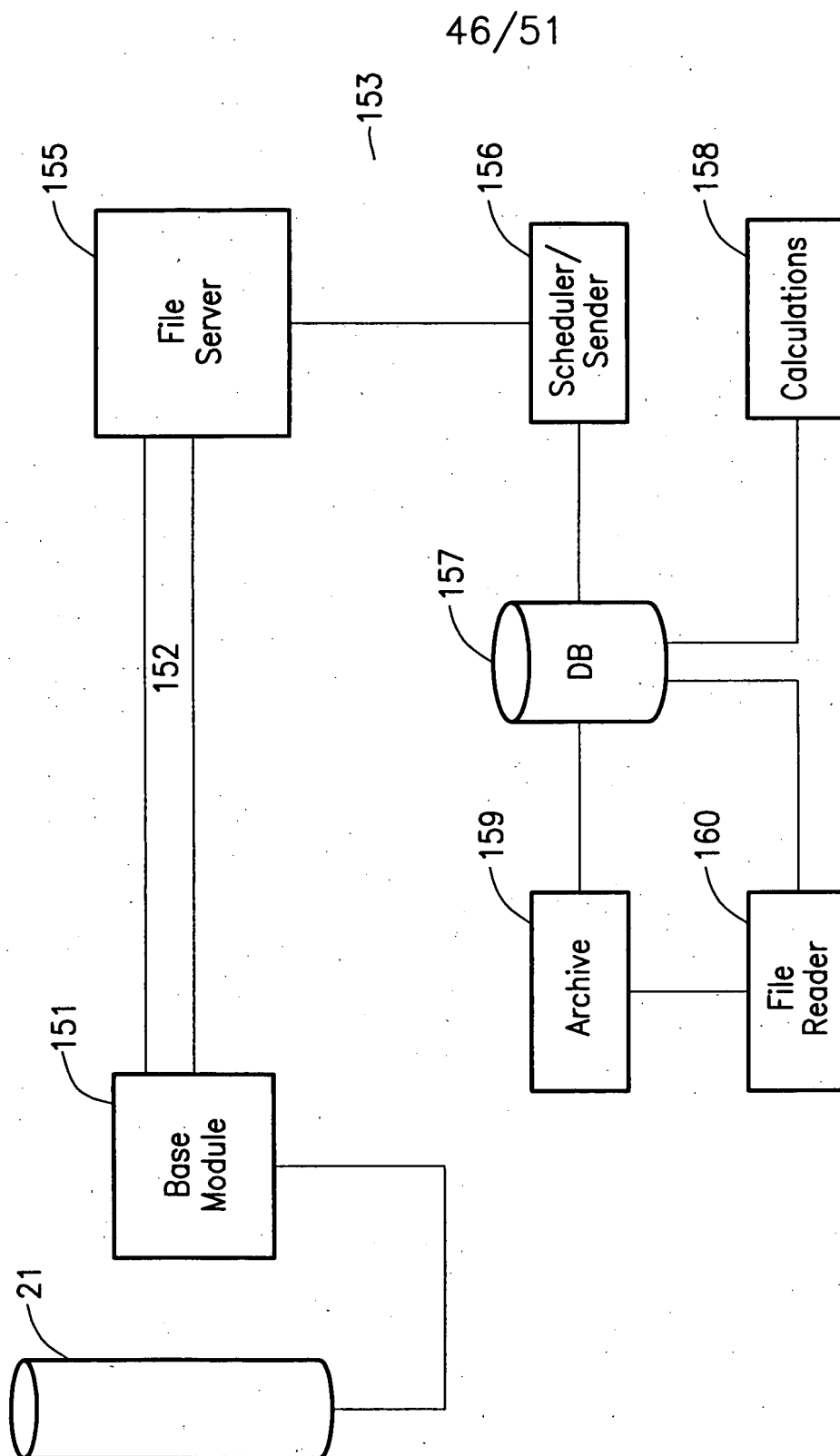


Fig. 37

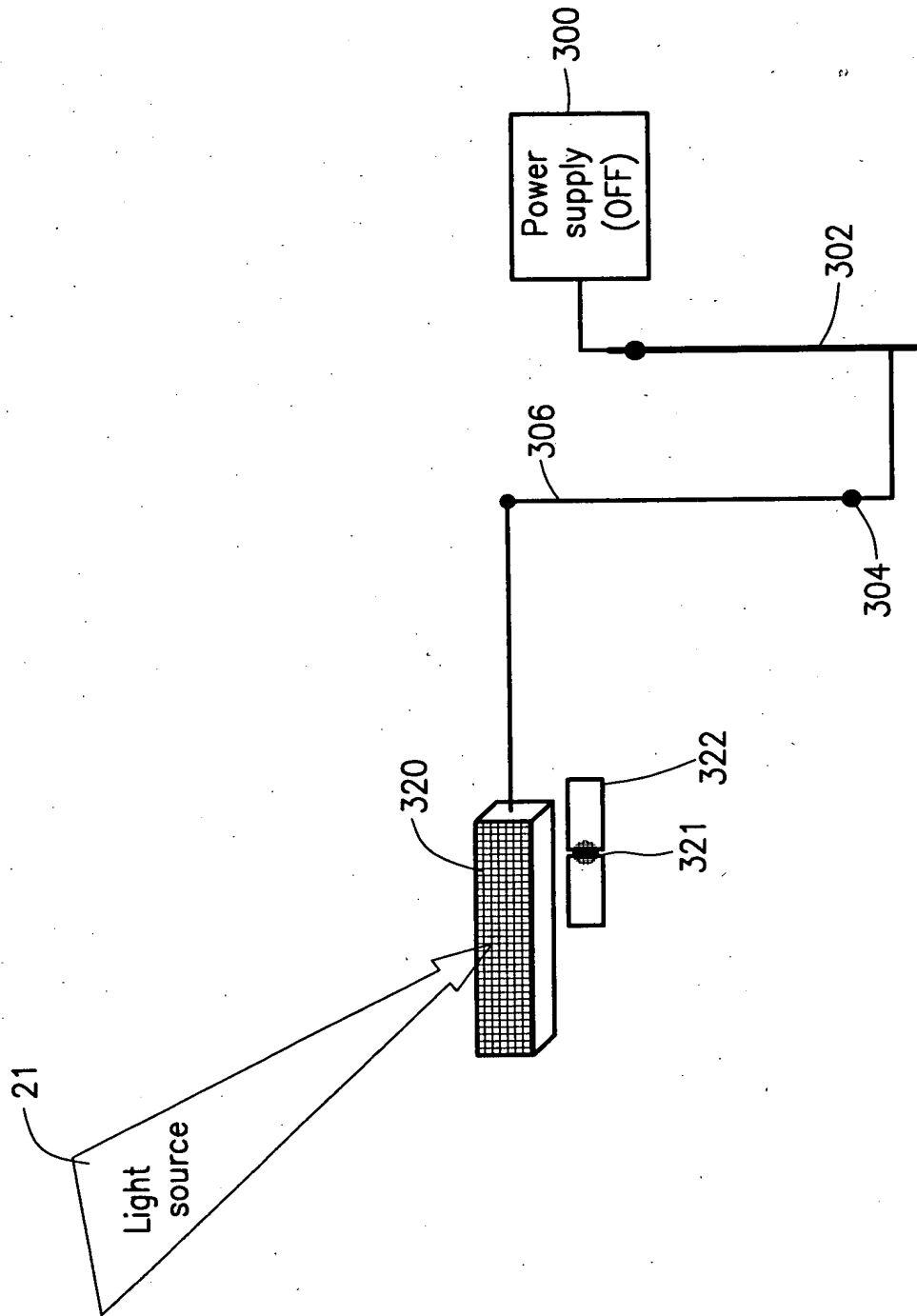


Fig. 38a

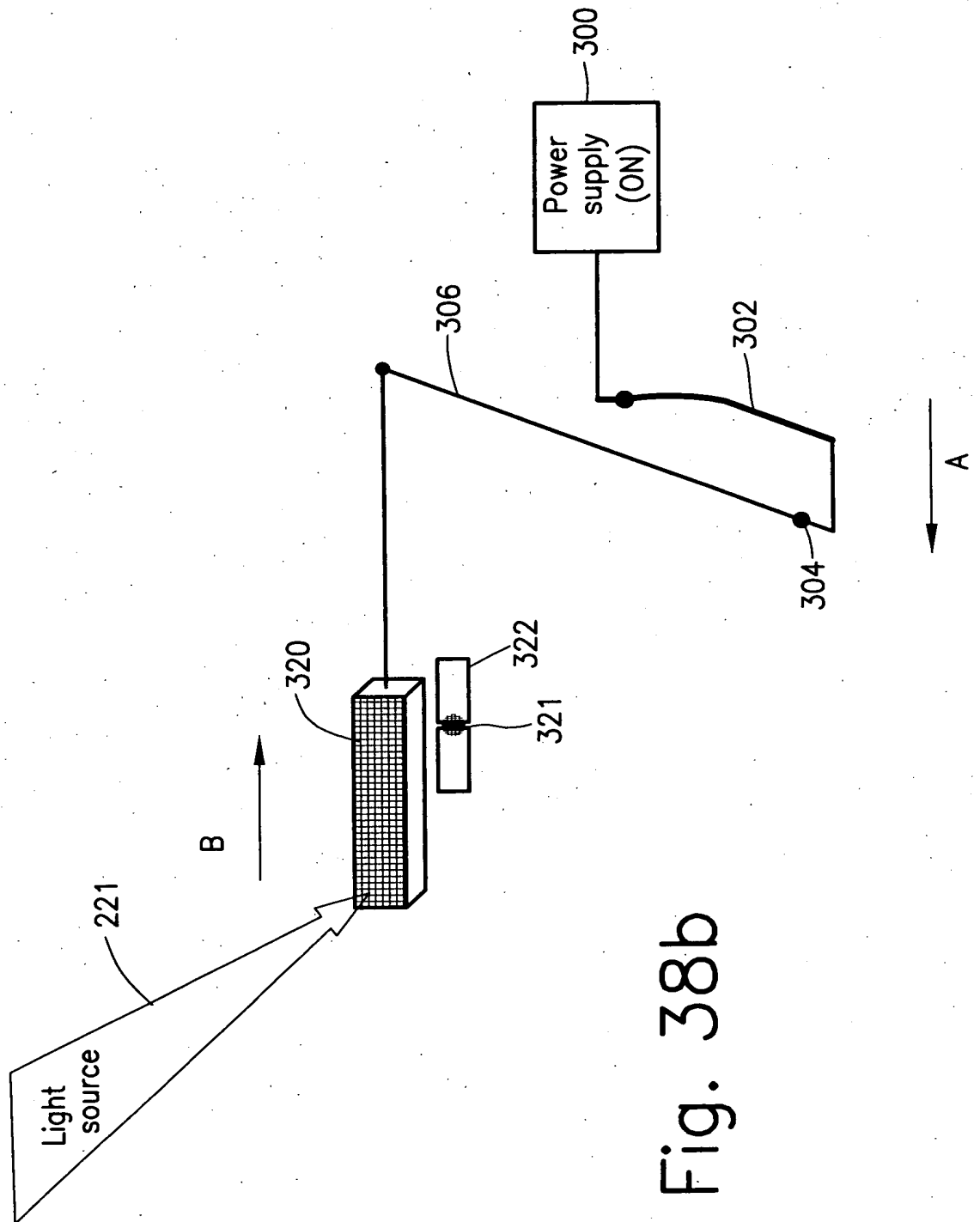


Fig. 38b

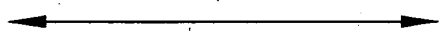
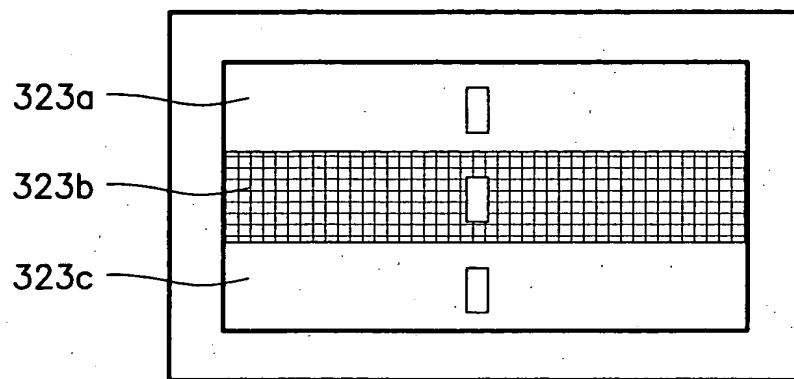


Fig. 39a

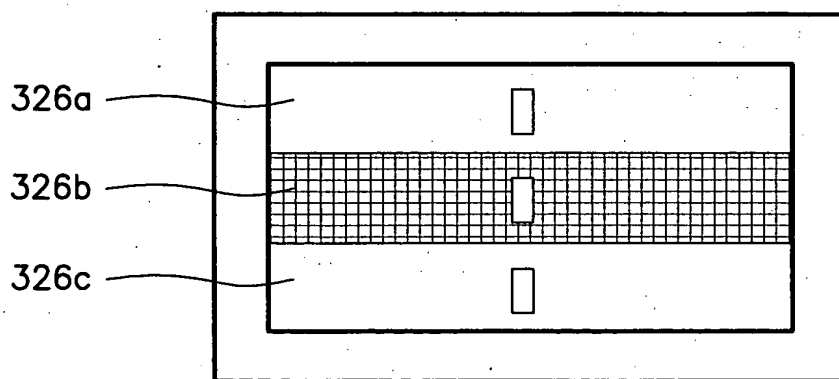


Fig. 39b

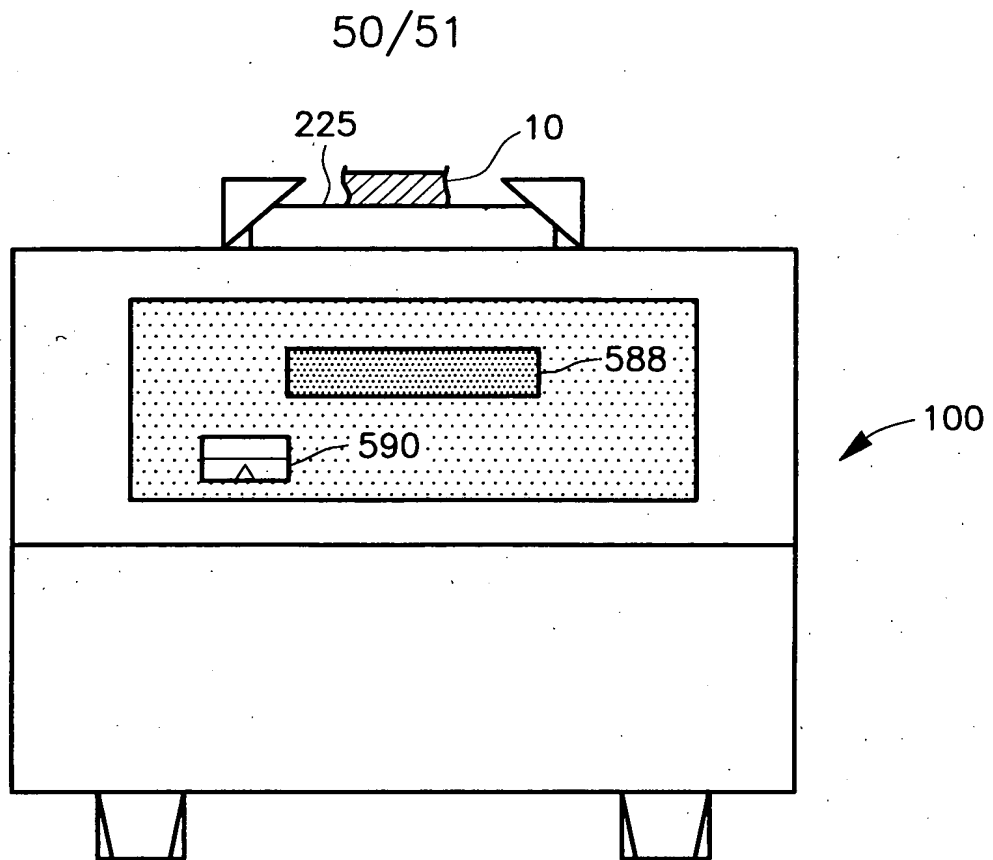


Fig. 40A

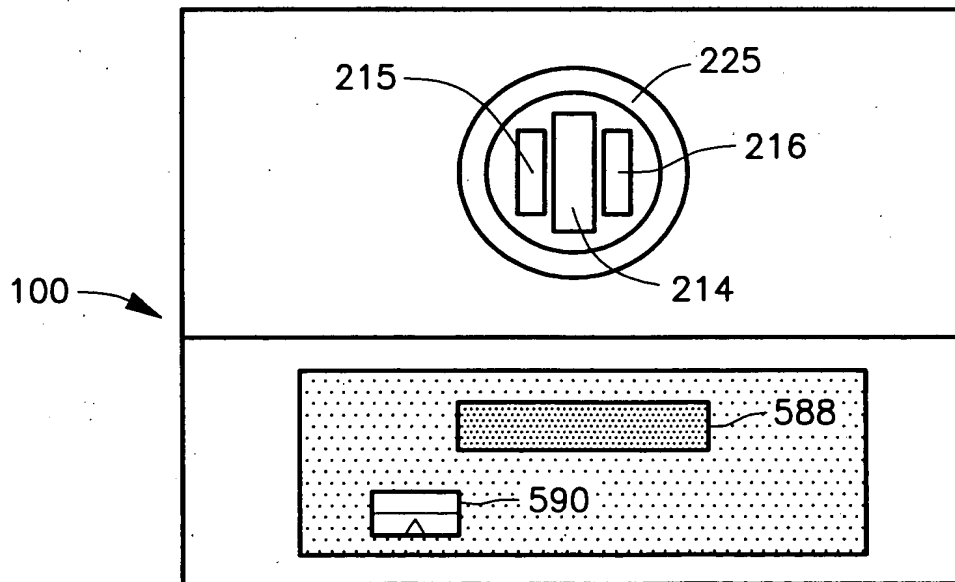


Fig. 40B

51/51

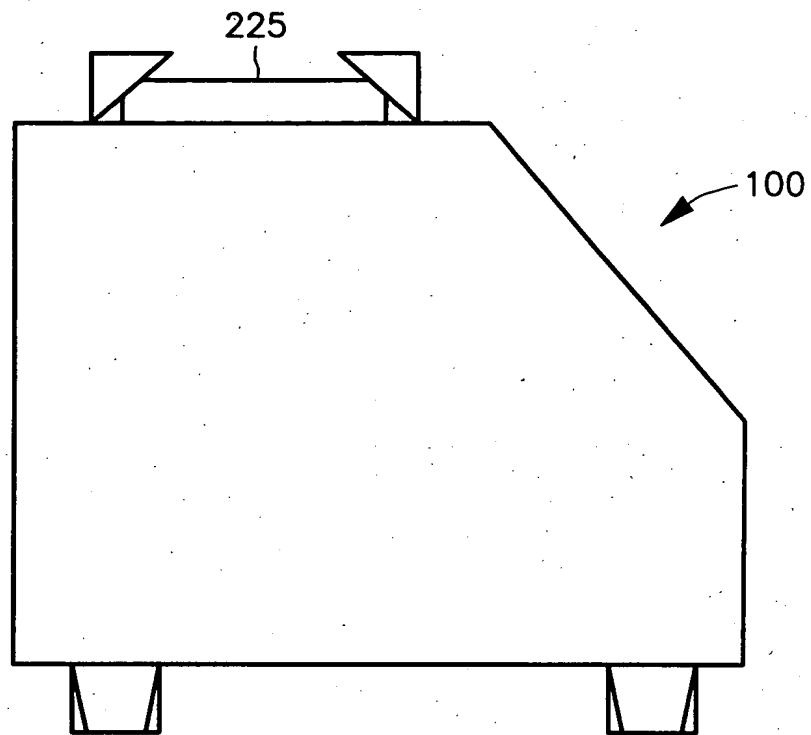


Fig. 40C

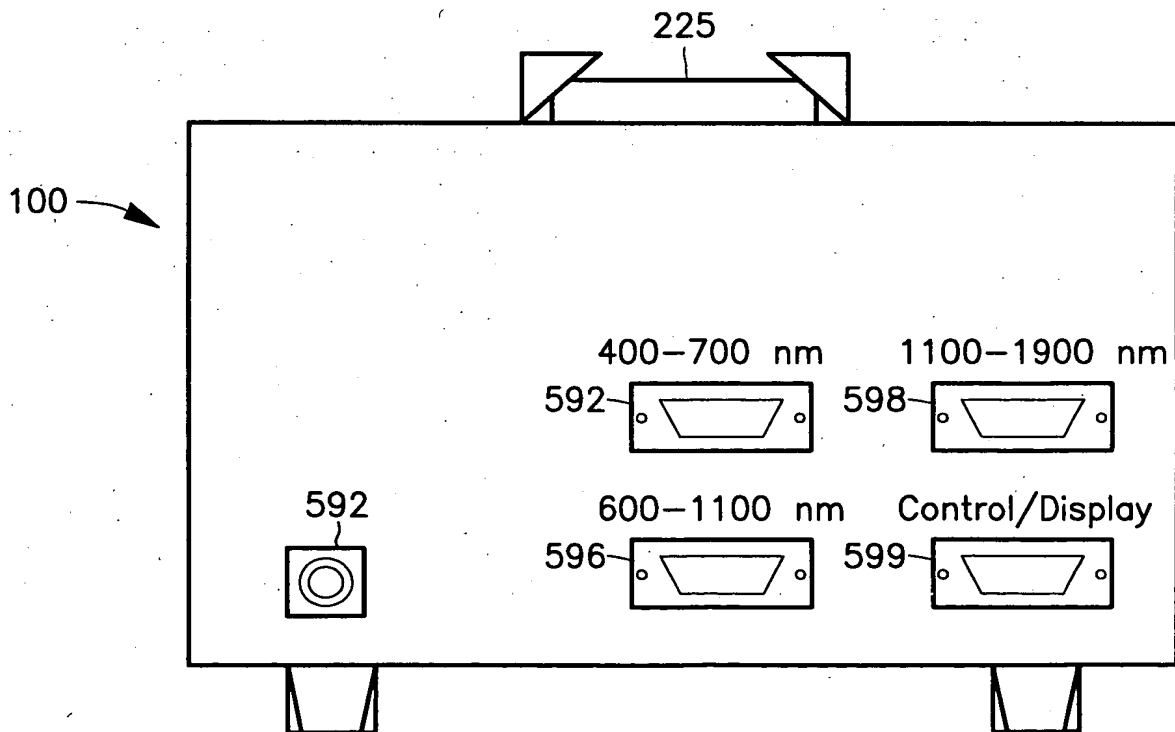


Fig. 40D